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A TASK THEORY OF STUDENT TEACHING: DEVELOPMENT AND PROVISIONAL TESTING

The Ohio State University

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A TASK THEORY OF STUDENT TEACHING:  
DEVELOPMENT AND PROVISIONAL TESTING  

DISSERTATION  

Presented in Partial Fulfillment of the Requirements for  
the Degree Doctor of Philosophy in the Graduate  
School of The Ohio State University  

By  


*****  

The Ohio State University  

1983  

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School of Health, Physical Education and Recreation
To Helen, Jo and Carrie,
who gave so much to help me realize a dream.
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CHAPTER I
INTRODUCTION

Background

One of the most ubiquitous components of all teacher education programs is practice teaching. Such experiences are called a variety of names: field experience; student teaching; teaching rounds; teaching practice; or practicum, but essentially they all entail teaching real children in a real setting - namely schools - for an extended period of time with close to full responsibility. For the sake of consistency within this dissertation, the term student teaching will be used to refer to all practice teaching. Student teaching rests firmly on the assumptions that learning by doing is worthwhile and that simulated experiences are less effective than "real world" experience.

Although the timing of student teaching varies from program to program (for example, in some programs practice teaching occurs as early as the first year and yet for others it is reserved as the culminating experience before graduation), certain organizational commonalities are evident. The student teacher typically is assigned to work with a particular teacher in a particular school. Called either the cooperating teacher or supervising teacher, this person is usually expected to guide the progress of the neophyte towards competence in teaching.
As well as the cooperating teacher, the student is normally also under the direction of a supervisor from the teacher training Institution. Called the supervising lecturer, university supervisor, or college supervisor, this person is typically expected to fulfill observation/guidance and assessment functions on behalf of the training institution.

Certainly student teaching is not a contemporary educational phenomenon. Indeed, as Hughes (1982) pointed out, "In its earliest beginning, teacher education was practice teaching" (p. 4). However, as early as 1859, at the First Annual Convention of the American Normal School Association, debate began over the value of practice teaching. Some considered that the lack of realism in student teaching was a major drawback, while for others, their grievance related to the fact that time in practice teaching interfered with the learning of subject matter (Hughes, 1982). The debate continues even today. Within the literature related to student teaching both sides of the debate are articulated.

Commenting on a decade of writing and research prior to 1969, Davies and Amershek (1969) claimed that "most of the literature of the period continues to furnish strong positive support for the importance of student teaching" (p. 1376). Within that era, James Conant's classic report on the The Education of American Teachers (1963) stated unequivocally that student teaching is "...one indisputable essential element in professional education." Certainly student teachers themselves consistently rate the student teaching experience as the most worthwhile aspect of their training programs
(e.g., Hermanowicz, 1966; and Love & Swain, 1980) student teaching is so essential that it should receive more time in training programs. As Zelchner (1980) has pointed out, an overriding belief among those involved in teacher training is "that practical school experience necessarily contributes to the development of better teachers" (p. 45).

However, Zelchner also argues that this commonly accepted belief is ill-founded and that it is, in fact, a myth that interns necessarily become better teachers through the student teaching experience. According to Zelchner we should exercise caution in accepting the laurels which many graduates place on their previous student teaching experiences, for what they are really saying is that anything would look good compared with the typical training programs at university or college. Tabachnick et al. (1978) issues a similar caution to those who uncritically extol the virtues of student teaching:

"There is no justification in our results for the naive notion that practical school experience must be useful in introducing students to a wide range of teaching abilities...." (p. 39).

Perhaps the strongest criticism comes from Friedenberg (1973) and Fielder (1966) who argue for the abandonment of student teaching because its function is considered to be largely ceremonial.

MacDonald and Zarel (1971) concluded from their research that the significance of traditionally conceived student teaching experience should be seriously questioned, and for Pruitt and Lee (1978) and Locke (1979), student teaching is often an educational charade in
which compliance is traded for a grade or recommendation. Locke (1979) stated the argument against student teaching rather succinctly when he claimed that:

"The only discernable outcomes of student teaching are confirmation of the vocational choice as a true possibility, and initiation into the realities of school life. The student learns that he or she can teach (the level of mastery need be no more than minimal for this) and is socialized into the value presumptions of the school. In the later process, the student learns that the "real" problems are time constraints, student numbers, student diversity and the consequences of compulsory attendance" (p. 5).

Thus, student teaching is itself problematic and what is needed is additional research "which probes more deeply into the subtle processes of student teaching and which can increase our understanding of the event itself" (Zelchner, 1978, p. 55). In their research into the student teaching process, Zimpher et al. (1980) identified a number of findings which provide a useful starting point for future research. Among their findings, the following had heuristic value for this dissertation study:

- Supervisors usually get just what they ask for from student teachers and not much more in terms of requirements.
- Many times student teachers do what is asked of them only because they think they have to fulfill an assignment.
- The supervision provided by the cooperating teacher and the university supervisor may result in contradictory advice.
- There was very little emphasis on grades or evaluation as a threatening phenomenon.

Each of these findings related in some way to the issues of
expectations and accountability, and it was thought by this researcher that a more productive interpretation of expectations and accountability within student teaching could be pursued by the application of Walter Doyle’s concepts of task to the student teaching setting. It was in a series of papers (1978, 1979a, 1980, 1981) that Doyle developed a conceptualization of tasks and their important relationship to teacher effects. A task is, according to Doyle (1980), "a set of implicit or explicit instructions about what a person is expected to do to cope successfully with a given situation" (p. 2).

Doyle (e.g., 1980), and others such as Carter (1980), Tousignant (1982) and Alexander (1982), have demonstrated the explicative power of the task concepts with respect to teaching/learning situations in both classroom and gymnasium contexts, and it seemed entirely reasonable that if student teaching is considered as a species of teaching/learning in which the Intern is the pupil, then the task concepts might have similar potential within that context. The following example of the task concepts applied as an interpretative heuristic to one of the Zimpfer et al. (1980) findings is illustrative of this potential. Zimpfer et al. found that "supervisors usually get just what they ask for from student teachers and not much more in terms of requirements." Such a finding seems entirely reasonable if we agree that a performance/grade exchange operates in student teaching as it does in classrooms (see Doyle, 1979). Certainly Locke (1979) was of the opinion that such a performance/grade exchange does exist within student teaching for he
claimed that for many student teachers the practicum is considered "... a game in which they trade compliance for a grade or recommendation" (p. 4). However, while such an interpretation is useful we are not given any information as to whether "what they ask for" is a description of what the supervisor actually states (verbally or in written form) is expected or whether it refers to what the supervisor actually holds the intern accountable for. In this instance, such information which is essential to a more complete understanding of the accountability system operating in student teaching, would only be available were the task themselves used as a focus for data collection and interpretation.

It is an arguable case that many of the criticisms related to student teaching relate directly or indirectly to the notions of expectations and accountability. Accountability involves "keeping an account of another's behavior to see whether it meets specifications" (Skinner, 1974, p. 205) and, it may well be that all too often within student teaching accountability is not part of the process. Instead, "mutual respect, professional loyalty and good manners seem to sugar-coat the cooperating teacher/college supervisor/student teacher interaction as though such deference will somehow make the practicum all that we want -- and need -- it to be" (Dyer, 1977, p. 1).

According to Alexander (1982), accountability is best understood in terms of the contingencies of reinforcement, and an understanding of the contingencies allows for the influence of consequences on a person's performance to be understood. The manner in which the contingencies operate for any given task are specifically related to
the degree to which the task performance is congruent with the task specifications. Considering the tasks involved in student teaching from the perspective of the contingencies of reinforcement would seem to be useful in gaining an understanding of the student teaching process.

Goals of the Research and Methodological Implications

The preceding argument lead to the identification of two research goals related to the possible relationships between Doyle's task concepts, the notion of accountability, and the student teaching process. First, the major structuring goal of this research was to take the task concepts and notion of accountability a step further in terms of refinement, and to develop and provisionally test a task theory of student teaching. This aspect of the study rests on the assumption that the task concepts are in fact applicable and relevant to the student teaching context. In essence, the theory consists of a set of concepts, stated relationships among the concepts, and a number of propositions. Each proposition became a working hypothesis and as such represented a specific question (see Chapter IV for specific hypotheses). Two general research questions can, however, be stated for this first research goal:

- To what extent are the working hypotheses confirmed or disconfirmed by the data?
- Are modifications to the theory necessary as a result of testing, and if so, what is the nature of the modifications?
The second major goal of this research was to address the "what is out there?" question mentioned by Fuller and Bown, 1975 (see Chapter II). It was anticipated that addressing this general question from the perspective of the developed task theory might provide some unique insights into the student teaching process. Given that there had been no research to date which had used the notion of accountability and the task concepts as an interpretive perspective within student teaching, the following specific research questions seemed appropriate:

- What are the characteristics of tasks in student teaching?
- What are the characteristics of accountability within student teaching?
- What is the function of supervisor monitoring within student teaching?

The two major research goals provided some difficulty with respect to their methodological implications. In particular, three issues related to choice of research method were of significance: the nature of the data necessary to fulfill the research goals; the nature of theory testing; and the feasibility of satisfactorily achieving the research goals. While these issues are discussed in detail in Chapter V, at this point it is relevant to mention the main thrust of these methodological implications.

Given the need to record details of the contingencies influencing task development and execution, it was necessary to gather descriptive type qualitative data for this study. Also, since the "life of a task" from its specification to its performance and
consequence was anticipated to vary greatly, data would need to be collected over an extended period of time. In terms of the strategies of theory testing, generally the chosen methodology would include quantitative data and statistical analyses. However, the need to have complete descriptive accounts of tasks necessitated the use of theory testing procedures which are appropriate for qualitative data. A modified form of analytic induction fulfilled both these demands. Participant observation was chosen to be the principal data gathering methodology and would necessitate spending as much time observing the student teacher throughout the term as possible.

The issue of feasibility predisposed to a single case study of one student teacher. An in-depth investigation of a single entity - the student teaching experience of one Intern - seemed feasible given the logistical limitations of student teaching. By spending an entire teaching term with one Intern there would be an increased chance of accurately describing the contingencies influencing task development and execution.

Significance of the Study

This study, in its most general sense is an example of what Locke (1982) calls research on teacher education (ROTE). Locke, referring specifically to the physical education context, found it useful to distinguish between research on teaching and ROTE:

"Teaching physical education and helping teachers acquire or improve their skills are two different pedagogical problems. Although teacher educators should be familiar with the
research literature from both areas, they must not assume that to know one is to know the other" (p. 3).

Although Locke defines ROTE as research in which some aspect of teacher training is the independent variable and some change in student teacher behavior is the dependent variable, he acknowledges the fact that this experimental configuration is not exactly applicable to all studies. However, the spirit of this model is general to ROTE and for this research, although the notions of independent and dependent variables are not appropriate, the fact that the focus of the study relates specifically to a part of the teacher training program (namely student teaching) legitimizes it as ROTE.

A useful framework for categorizing ROTE is provided by Locke (1982) in which variables are derived from Hall's (1979) classification of ROTE and Dunkin and Biddle's (1974) model for the study of teaching. The combination framework contains the following categories - presage, context, process, product, research methodology, Innovation and change, preservice Induction, and Inservice. This study clearly fits the process category.

The significance of research in this process category is revealed in the discussion of a national agenda for research on teacher education in the 1980's by Hall and Hord (1981). The agenda was the result of an eighteen month project by the Texas Research and Development Center for Teacher Education with support from the National Institute of Education.

"The goal was to develop a set of teacher education research priorities that were built on past research, that had potential for accumulation across studies, and that could be
related to the present realities of teacher educators and teachers" (p. 4).

Eight priority research issues were identified, one of which was that "the current process of teacher education should be explicated and integrated, alternative models developed, and factors moderating effectiveness identified" (p. 6).

This study represents an example of such research in that the process of task development and execution is investigated, a task theory of student teaching developed, and some of the factors moderating the effectiveness of the student teaching process identified and discussed.

In his review of ROTE, Locke (1982) claimed that other than a few notable exceptions such as Tempi In's (1979, 1981) application of social theory to student teaching in physical education, and the Ohio State supervision research program (Sledentop, 1981) which was based on behavior analysis theory, physical education ROTE has been largely atheoretical. The present study is an attempt to develop and test a theory and as such represents a departure from the largely atheoretical traditions of ROTE-PE.

Locke (1982) also claimed that the difference between the overt expectations of teacher educators and their covert expectations is often great and that research into the hidden curriculum of teacher education is needed. Although this research is not concerned specifically with the hidden curriculum, its focus on the contingencies influencing tasks has potential to reveal some of the possible discrepancies between overt and covert expectations.
specifically related to tasks.

It is hoped that this research will provide the catalyst for more research into the nature of tasks within student teaching in general and into the significance of accountability mechanisms in the training of interns.

Assumptions

The development and testing of the task theory of student teaching entails three basic assumptions:

1. Student teaching is a form of teaching/learning in which the Intern fulfills the role of a learner and the supervisors fulfill the role of teacher.

2. Success in student teaching is, in part, a function of how well the Intern can meet the supervisor's expectations.

3. Doyle's concepts of task which were developed to explain teaching/learning within classrooms also are applicable to student teaching.

Limitations of the Study

The fact that this research is a case study would be considered by some critics to be a limitation to the generalizability of the findings. This particular issue of generalizability is discussed in more detail in Chapter V, however, it is important to explain that the choice to study a single case was made on the basis of the need for a complete description of the contingencies influencing tasks. Such a choice, given the logistical limitations of research conducted
by a single researcher, meant that observing more student teachers in order to enhance possible generalizability of findings was out of the question. In addition, the provisional testing of the theory is meant to be just that—provisional. Should the theory not be disconfirmed by the data, then the "proof of an instance is proof of the possibility" that the theory may have wider application.

As mentioned above, there are logistical limitations associated with conducting an investigation with a single researcher. However, the fact that investigator bias and the presentation of a single interpretation are also more likely with a single researcher and the subsequent challenge to the validity of the data and their interpretation must also be considered. The conduct of dependability and confirmability audits (Lincoln & Guba, 1982) was an attempt to address this concern (see Chapter V for details).

A major epistemological issue within this study relates to the use of naturalistic methods to collect data and test a theory which is best described as a logico-deductive type characteristic of the positivistic tradition. For the epistemological purist, this mixing of paradigms would be a serious limitation to this study. However, as argued in Chapter V, such epistemological eclecticism is not without precedent in educational research and, within the conception of this study, is the most appropriate position to fulfill the research goals.
Description of the Research

Naturalistic research methodology served as the way to gather detailed, descriptive, qualitative data on the nature of tasks and accountability mechanisms within student teaching. An a priori developed theory was tested using modified analytic induction methods. The study will be presented in the following form:

Chapter II: Review of the Literature will provide a restricted review of the research literature related to student teaching.

Chapter III: Theory: Its Nature and Purpose discusses what is meant by theory and the functions of theory within the context of research in general and educational research in particular.

Chapter IV: The Development of the Task Theory of Student Teaching. In this chapter Doyle’s concepts of task are discussed and how these concepts and the notion of accountability were arranged as the initial and revised versions of the theory are presented.

Chapter V: Review of Methodology outlines the methodological underpinnings of the study and provides a rationale for the mixed paradigmatic position taken within this study.

Chapter VI: Methods and Procedures describes in detail the specific characteristics of the research design and the methods and procedures employed in data collection and analysis. In addition, an account is given of the specific procedures employed to enhance the trustworthiness of the inquiry.

Chapter VII: Analysis and Discussion. This chapter presents selected data to answer the specific research questioning of the study. In particular, the provisional testing of the task theory is
presented and discussed as are the general findings related to the nature and function of tasks and the role of accountability within student teaching.

Chapter VIII: Summary, Conclusions and Recommendations. In this chapter the complete research project is summarized and the study conclusions presented. In addition, a number of recommendations for future research and practice relating to student teaching are presented.

Definition of Terms

Accountability: When one person is "keeping an account of the behavior of another to see whether it meets specification" (Skinner, 1974, p. 84).

Ambiguity: Gaps in information about performance expectations as to what kinds of answers will be required and which will be considered correct (Doyle, 1979b).

Arranged consequences: These are contrived consequences which have been planned or arranged in advance of the performance.

Contrived consequences: Consequences which are applied following a performance and as a result of that performance. Such consequences are in addition to any consequences which naturally occur as a result of the performance.

Contingencies of reinforcement: The specification of: (a) the occasion upon which a response occurs, (b) the response itself, and (c) the reinforcing consequences (Skinner, 1979, p. 7).
Contingency developed tasks: Tasks which are shaped by the power of natural consequences or by contrived consequences.

Feedback consequences: These consequences are generally incidental in nature, having not been formally arranged prior to performance. Typically feedback consequences are supplied subsequent to the observation of performance by the cooperating teacher or university supervisor.

Formal accountability: When the consequences of accomplishing certain tasks are directly related to an Intern's grade or recommendation.

Fully explicit tasks: Tasks in which details of situation performance and criterion are explicitly communicated to the Intern.

Implicit (tacit) tasks: Tasks which have not been explicitly specified but which are consequated as if they were so articulated. In other words, task performance is expected although such expectations are never explicitly stated.

Natural consequences: Consequences subsequent to performance and which are "applied" by the natural environment in which the performance takes place.

Organizational tasks: Those tasks which specifically involved the student teacher in preparation for teaching. Including such tasks as lesson planning and physically arranging equipment/apparatus.

Partially explicit tasks: Tasks in which both situation and performance are communicated explicitly, but where no details are given concerning criteria for successful performance.
**Participant observation:** In general terms, often used synonymously with field work. Within this study it will refer to the procedure of direct observation of student teaching including some amount of social interaction with the subjects of the study.

**Phenomenological:** Primarily oriented toward description rather than toward the formation of theory; the subjective perspective is of primary importance (Goldstein, 1961).

**Positivism:** The belief in science's ultimate adequacy as a mode of knowing and as a guide for action; it perceives the natural and human worlds...as fully amenable to systematic and eventually quantitative exploration and explanation (Naegele, 1961, p. 1210).

**Real (actual) task:** The response a student must emit to cope successfully with a situation; the real task is defined by the responses the teacher actually accepts (Tousignant, 1982).

**Risk:** The probability of securing a successful performance grade exchange, weighted against the consequences of failure to meet performance requirements (Doyle, 1979a, p. 194).

A modified definition is more appropriate for student teaching—"the probability of obtaining some positive reinforcement for task performance weighted against the consequences of failure to meet performance requirements."

**Routinization:** A continuum describing the extent to which the accomplishment of a task is contingent upon its explicit specification. High routinization is associated with implicit task specification (Alexander, 1982).
Social tasks: Those tasks which functioned to create and maintain cordial relations between the student teacher and significant others in the student teaching experience (e.g., cooperating teacher and university supervisor).

Stated task: A set of explicit instructions communicated in oral or written form to a person to inform him/her of what they are expected to do.

Supervisor monitoring: The act by the cooperating teacher or the university supervisor of either observing an Intern's teaching or of checking by other means the degree of task congruence.

Task: A set of implicit or explicit instructions about what a person is expected to do to cope successfully with a situation (Doyle, 1981a).

Task congruence: The task performance is in accord with the task specifications.

Task difficulty: A function of Intern ability, teaching setting and supervisor expectations. When Intern ability is low and expectations are high then a task would be said to be difficult.

Teaching tasks: Those tasks which relate specifically to situations in which the student teacher has direct contact with pupils for the purpose of facilitating pupil involvement in motor activity.
CHAPTER II
REVIEW OF LITERATURE

Explanation

Owing to the focus of this dissertation research, it was necessary to review literature on a number of different topics. As an attempt at theory development and testing, it was necessary to review the nature and function of theory. As an application of Doyle's concepts of task, it was necessary to review the conceptual and empirical literature on tasks. Also, since the study involved student teaching it was necessary to review some of the literature related to student teaching. Review and discussion of theory and of tasks is, for conceptual and organizational clarity, included in Chapters III and IV respectively. Review and discussion of student teaching is found in this chapter.

The nature and scope of the review

The purpose of this chapter is to provide a review of the literature on student teaching which was relevant to this study. Certainly there was no dearth of literature on student teaching, however mere volume was no guarantee of quality or of agreement on what is "truth". As Zelchner (1980) pointed out, although there have been literally hundreds of studies on student teaching "there is a great deal of confusion and contradiction surrounding the data which
do exist" (p. 6). Davis and Amershek (1969), following their then comprehensive review of the literature, expressed the sentiments of other early reviewers (e.g., Peck & Tucker, 1973) when they claimed that:

"A review of research in this field leaves one with a great feeling of urgency to expedite the study of student teaching; given its ascribed importance in Teacher Education, it is alarming to find so little systematic research related to it. Discussion and descriptive reports are plentiful but comprehensive basic study of the processes involved is lacking. Studies of what really happens to the student teacher are vital" (p. 1384).

In 1975, Fuller and Bown reviewed the literature on student teaching and agreed that "the whole area of teacher education should be recognized as a case of the general class of behavior change..." and that "the appropriate question at this state of knowledge is not 'are we right?' but only 'what is out there?'" (p. 52). It is this researcher's opinion, however, that we now do know a good deal about "what is out there" due to a number of excellent naturalistic studies of the student teaching process, and that there are also a number of studies which use research designs which specifically focus on behavior change. Many of the contemporary reviews of the literature (such as Griffin et al. 1981; Locke, 1979 and 1983; and McIntyre, 1983) provide some discussion of the research which addresses the "whats out there" question, but few provide much insight into the behavior change issue.

At the outset, it seemed necessary and prudent to seek an organizing theme to enable the review to have some form of internal consistency. Zeichner (1978) used a research paradigmatic
classification in his methodological critique of the research on student teaching. McIntyre (1983) grouped studies by means of their primary focus - for example those which reported the influence of the cooperating teacher, those which considered stages in student teaching, and those which reported on the status of clinical faculty. Locke (1983), in an ambitious classification of research on teacher education using an extended version of the 1974 Dunkin and Biddle model for classifying research on teaching, categorized research on student teaching as process variable research.

No matter which classificatory scheme is used, however, there will inevitably be some overlap where one or more studies had multiple foci, or used multiple methodologies. Within this chapter research studies are reviewed which, in Zelchner's (1978) terms, come from two distinct paradigms of educational research. Although this issue is discussed specifically in Chapter V, it is necessary at this juncture to locate these studies in the context of Zelchner's critique. Zelchner, among others, (e.g., Tabachnick et al. 1978, and Popkewitz, 1977) has strongly criticized much of the research on student teaching and contends that "...most of the studies in this area reflect the narrow assumptions of the psychometric paradigm and rely almost entirely on the pre- and post-administration of questionnaires and surveys for their data" (1980, p. 54). While not eschewing the psychometric paradigm, Zelchner does point out that the dominance of this way of thinking about, and doing, research (see Chapter V for an explanation of educational research paradigms) has resulted more in a piling up of findings rather than an accumulation of knowledge.
Within this review, studies which represent examples of different research paradigms are presented. No attempt is made to specifically categorize these studies under their paradigmatic groups because it was considered that the nature of their respective research foci was more instructive than any methodological similarities or differences.

The first limitation for this review was to consider only literature which was empirical in nature. Such a condition immediately removed from consideration all "think pieces" and advocacy papers which had no empirical base. In essence, it was the research literature which was of interest. Another limitation which seemed important in order to reduce the scope of this review was to seek only studies which were somewhat contemporary—namely published after 1975. This limitation was, however, not absolute and if an older study was known to be seminal or significant by virtue of its uniqueness then it was included also.

These limitations on the empirical base and the age of the literature effectively reduced the scope of the review and next it was necessary to group the studies in an appropriate manner. As Griffin et al. (1981) have argued, "A major issue regarding student teachers is the way in which they acquire their teaching behavior" (p. 30), and it is the issue which is directly related to the notion of a task theory of student teaching which is the major focus of this dissertation. In general, then, this review focuses upon research which probes the influences of socialization and training on learning to teach, and such a focus is considered an appropriate context in which to begin to understand the tasks of student teaching.
Throughout this review, no specific attempt was made to separate studies which focus on student teaching within a physical education setting from those within classrooms. While it is recognized that the nature of the setting is relevant to any interpretation of findings, it is the researcher's opinion that the process of student teaching is essentially more similar across settings and subject specialties than it is different. To this end, a number of significant research studies within the physical education context are reviewed because they add to an overall understanding of the student teaching process. In fact, with the exception of Locke's reviews (1979, 1983) which emphasize physical education studies, none of the physical education studies have been included in any of the general reviews mentioned earlier.

The use of primary sources

For this review, one further condition was applied. In order to avoid the problem of misrepresenting the findings of any study, each study was reviewed in its primary publication source and adequate detail of relevant methods and procedures have been included to aid the reader in interpretation of the findings. The following study reveals the problems of misinterpretation.

The study by Price (1961) into the influence of the cooperating teacher (whom Price called the supervising teacher) on the attitudes and teaching performance of the student teacher, although old, is frequently cited as an example of influence of the cooperating teacher on the teaching behaviors of interns. For example, both
Griffin et al. (1981) and McIntrye (1983) claim that the Price study revealed that student teachers are affected by the teaching practices of their cooperating teachers. Inspection of this well-cited study, however, casts doubt on the claims it made, and subsequently on the claims made by reviewers such as Griffin and McIntrye.

Price used two instruments to gather data for his study: The Minnesota Teacher Attitude Inventory (MTAI) for measurement of attitudes, and the Sanders Observation Schedule (SOS) for measurement of classroom teaching performance. The SOS instrument was conceived from a survey of the literature to gather general principles for categories such as:

1. Provision for Individual differences.
2. Curriculum organization and teaching techniques.
3. Social organization and classroom psychological climate.
4. Efficiency and orderliness.
5. Teacher control techniques.

Supervising teachers and their interns were categorized on the basis of scores on the MTAI. Forty-five interns and forty-five supervisory teachers were matched on their scores (high, middle, and low) and placed in groups of fifteen. Data on the teaching behaviors of the supervising teachers was collected by university supervisors using the SOS for six, 45-minute observations before the student teaching semester began. Student teachers were observed using the SOS in the last month of their teaching.

Following analysis of the results, Price claimed that his study showed "...a considerable change occurred in student teachers'
attitudes during the student teaching semester and that there was a tendency for their attitudes to change in the direction of the attitudes held by their respective supervising teachers" (p. 476). However, Price then admits that "on the other hand, a closer inspection of attitude scores showed that the findings were not entirely true when considered on an individual basis" and that "more research with larger samples is needed" (p. 476). This appears to be a vivid example of the validity of much of the criticism of group design research into human behavior (e.g., Johnson and Pennypacker, 1980).

Of specific relevance to this review category of "learning to teach" is Price's conclusion that "...the correlation between supervising teachers' and student teachers' classroom teaching performance indicated that student teachers seem to acquire many of the teaching practices of their supervising teachers during the internship semester" (p. 475). However, since no SOS data were obtained on the student teachers at the beginning of the semester, Price had no empirical evidence to support his claim. The fact that the teaching behaviors of the Intern and the cooperating teacher correlated at the end of the semester is not evidence of causality—namely that the cooperating teachers influenced the Interns. Therefore, when only the conclusions of this study are read and cited, one may perpetuate an unfounded claim.
Learning to Teach in Student Teaching

Socialization Influences

It was Lortie (1975) who first argued that biography, as opposed to formal training or teaching experience, was the most significant socialization influence on interns. Locke (1983) called this biography "an invisible apprenticeship in pedagogy lasting from 12 to 15 years" and further claimed that "twenty thousand hours is more than enough time to acquire complex social behaviors through the agency of modeling" (p. 33). The empirical support for the "invisible apprenticeship in pedagogy" is, however, not yet available and while the question of the extent to which teaching behaviors are learned before teacher training is of vital importance, the present literature only offered a limited answer to the question of how socialization during student teaching influences an intern's teaching behaviors. The following studies represent what has been empirically discovered with respect to this second question.

Although old, the study by Iannaccone (1963) represents a significant contribution to our understanding of the nature of learning to teach in student teaching. As a part of a larger study of student teaching at four midwestern institutions by Iannaccone and Button (1964), Iannaccone (1963) used qualitative analysis of the logs of 25 student teachers as a major source of data to illuminate the student teaching experience. In addition to document analysis, the research involved observation of student teachers in their school settings, interviews and informal interaction with the student in
such settings as weekly on-campus meetings and the coffee lounge.

Three conceptual sociological frameworks were used to orient the analysis of the logs. Van Gennep's (1960) model of "Rites of Passage" was utilized in characterizing student teaching as a transitional process between the adolescence and the world of work. Three stages were revealed: Firstly, a break with former status as an adolescent student and acceptance of a more active part in learning than previously taken; secondly, students are not sure they will be successful in becoming a teacher and therefore this stage is characterized by high anxiety; when the student actually begins to teach, the relationship with the cooperating teacher changes as the social distance in the did begin decreases.

Chapple and Arensberg's (1940) concept of "Interaction sets" helped to describe the characteristic patterns of the Interpersonal relations revealed in the student logs. Three Interaction sets were found to characterize student teaching. A "dyad set" existed throughout the experience in which the cooperating teacher was superordinate and the student teacher subordinate. During the first period of student teaching, an "observer set" was evident in which the teacher taught and the student watched. The "teaching set" was characteristic of the period in which the student actually began teaching.

By analysis of the logs, Iannaccone (1963) found that a student's view of appropriate teacher behavior and pupil response changed, as did the nature of the dyadic relationship. Commenting on the reaction of student teachers to certain "horror" teacher behaviors
(e.g., making children clean paint jars or shaking a child), Lannaccone states:

"In every instance of a "horror" listed by Alice, we find, by the end of the semester, a parallel rationalization which not only explains the necessity for the "horror", but redefines it as good for children" (1973, p. 76).

Similarly the changing nature of the dyadic relationship was revealed by student log entries such as "my cooperating teacher and I" then "Miss Adams and I", then later "we".

Using the Becker et al. (1961) concept of "perspectives", Lannaccone (1963) found that there was a common pattern of changes in perspectives by student teachers as they moved from observer set to teacher set. "The suggestions, information, and evaluations made by the cooperating teacher tend to change the student teacher's perspectives concerning classroom management and levels of expectations" (p. 78). Expressed concerns for individual children found early in the logs tend to disappear as the teaching set evolves. Students found that when they followed the advice of the cooperating teacher, "It works" and "getting through the lesson" became the primary objective.

"Success in the teaching interaction set and acceptance by the cooperating teacher result from keeping the teaching activity going. This success is achieved by the setting of low levels of expectations and by classroom management" (p. 78).

For Lannaccone, this is the most significant finding of the study and he concludes by claiming that:

"In the final analysis it is this new basis for accepting or rejecting proposed teaching procedures which may be the most significant product of student teaching. Does it work to solve the immediate problem at hand?" (p. 80).
The fact that such short term satisfaction may not be best in the long term and/or that it might be at variance with expectations set from the training program bears serious consideration.

Tabachnick et al. (1978) used qualitative methods to seek to answer the question of how student teachers assigned meaning to their beliefs by acting on them and how they gave meaning to their actions after they occurred. In general terms, the study was an attempt to analyze the impact of the student teaching program on the professional perspectives of 12 student teachers.

A team of six researchers collected data by means of observation, interview and surveys over a period of two semesters. Typically, each student was observed teaching at least twice and interviewed before and after each observation. Observation also took place during weekly on-campus seminars, in university orientation sessions, and in supervisory conferences with cooperating teachers and university supervisors. Three major themes evident in the data were used for organization and discussion.

Among their findings, Tabachnick et al. (1978) claimed that the range of activities and interactions involved in student teaching is very limited. Teaching typically focused on narrowly specific short term skills or on testing or management procedures. Students had little control over what they should teach or how to teach it. Indeed, students considered what to teach as non-problematic. Discipline was defined as the most significant problem for student teachers and:
"Keeping children busy and doing things that would insure that the children moved through the lesson on time and in a quiet and orderly fashion became ends in themselves rather than means toward some specified educational purpose" (p. 39).

Although student teachers were reported to develop "a high degree of technical proficiency", their application of the criteria of pupil success was almost entirely utilitarian, with the result that their practice was separated from their ideas and also theory. The importance of teaching technique as the most important concern of teaching tended to be legitimated by the university and experimentation was traded for compliance to authority in order to get the job done.

These findings were in sympathy with those of Iannaccone (1963) and clearly indicate that much of what is learned implicitly in student teaching is in conflict with the explicit training program expectations.

Popkewitz (1977) described the details of a research project which was part of a larger study known as the Corps Member Training Institute (C.M.T.I.) Impact Study. The training of corp members (known as Interns) was conceived as a two year program which began with a one month campus-based training program followed by a two year largely field-based program. Although this Internship is somewhat different to traditional student teaching programs, Zelchner (1978) argued that "it contains many of the elements advocated in the current literature of teacher education" (p. 83) and its findings "are directly applicable to an illumination of the impact of student
teaching as it is currently practiced across the country" (p. 83). To this end the Popkewitz study bears relevance to this review.

This study was essentially concerned with the intern's classroom experiences during their first year in the program. Data were collected mainly in the field, beginning with observations and interviews of some 44 interns between November and March and ending with interviews of 8-12 interns in May. The Popkewitz paper is one of a number of papers and technical reports which followed the study, and it is claimed by Zelchner (1978) to be representative of the portrayal of interns' teaching experiences.

It was predicted that due to the diverse nature of the autonomous teacher corp projects and the different school settings in which interns were placed, many differences in the beliefs and actions of interns would be found. However, Popewitz reported much similarity between interns:

"Despite the surface differences, there was a striking and continual similarity in assumptions to guide professional perspectives. The concern of teaching was technique, a search for efficient and rational procedures to teach precisely measured skills" (p. 9).

Popewitz also found that interns felt pressures towards conforming to prevailing norms of their schools, especially concerning the maintenance of control and order. "While interns may have expressed disagreements with the practices they observed, their classroom actions were often congruent with the very practices they had previously rejected." How similar these findings are to those of Lannaccone (1963) and Tabachnick et al. (1978).
Zimpher, deVoss and Nott (1980) conducted a naturalistic study of student teaching using first-hand observation, interviews, and document analysis. The general research focus was Fuller and Bown's (1975) question: "What is out there?" as it related to the traditional triadic relationship between student teacher cooperating teaching and university supervisor. Data were collected on the experiences of three student teachers, their cooperating teachers and their university supervisor over an 11 week student teaching term. The field data were gathered by two observers who were not officially involved in the student teaching experience.

A more specific question, "What do supervisors do during student teaching, and to what end?" provided an orientation for the study. Zimpher et al. (1980) found that one of the supervisors major roles was the defining and communicating expectations to be fulfilled by both the cooperating teacher and the Intern: "When the supervisor set low (or few expectations, those were the exact expectations the student teachers fulfilled. Both cooperating teachers and student teachers explicitly left his task to the university supervisor" (p. 13). In other words, neither the cooperating teacher, nor the Intern took the initiative to define the expectations of the supervisor.

Also, it seemed that the supervisor had an intervention function in terms of disuading premature (in less than a week) Intern responsibility for full time teaching in the classroom. Observation time was considered by the cooperating teacher and the Intern to be of little value. Zimpher et al. claimed that without the role of the supervisor "It would be simply an experience in which the student
teacher attempted, as quickly as possible, to replicate all that the cooperating teacher did without analysis or reflection about the teacher's role" (p. 13).

The university supervisor also served an important function relating to evaluation and constructive criticism. Cooperating teachers, according to Zimpher et al., were careful not to criticize negatives and tended to "assume a buffer role defending the student teacher against the university supervisor" (p. 13). The supervisors were also found to act as personal confidantes to both Interns and cooperating teachers, for at times personal communication between cooperating and student teachers was not possible.

In terms of negative Influences, the university supervisors were found to be greatly influenced by the first impressions of the intern and much of their criticisms were not based on data but on their own personal preferences. Generally, student teachers tended to ignore much of what they learned in methods courses and Instead,

"...tend to model cooperating teachers closely, at least in the area of classroom management. Students went with 'what worked', and what worked was what their cooperating teacher did in the same classroom" (p. 14).

The similarity of this finding to those of Iannaccone (1963), Tabachnick et al. (1978) and Popkewitz (1977) is striking.

Zimpher et al. (1980) also found that the supervisor had little success in encouraging creative or experimental teaching in the student teachers, and that "students presented a whole series of false barriers about why they couldn't currently be the real teacher they knew they could be in their own classroom" (p. 14). Again, this
finding Is in accord with those of lannaccone (1963), Tabachnick et al. (1978) and Popkewitz (1977).

Beginning with a premise that the focus of most studies into student teacher socialization had been limited primarily to the influence of the cooperating teacher, Friebus (1977) attempted to identify the range of individuals acting as socialization agents within student teaching. Friebus claimed that much research into student teaching socialization processes had been limited by the overuse of such standardized tests of attitude as the Minnesota Teacher Attitude Inventory. Instead, Friebus used the qualitative research method of interviews in order to "deal with characteristics of student teaching that cannot be fully specified before data collection begins" (p. 264).

Data were collected by means of a series of six semi-structured interviews with each of nineteen student teachers. The interviews were conducted every other week during the student teaching quarter, with the final interview three weeks after the quarter had finished. The semi-structured nature of the interviews allowed Friebus to focus on four major areas of interest which had been suggested by previous studies of professional training. First, coaching, which was defined as a collection of activities involving someone who advises and guides the intern. Second, legitimation, referred to someone sanctioning in some manner an intern's claims to professional identity. Third, who did the interns use as a reference to gain a sense of their teaching success or failure? And fourth, in what ways
were student teacher peers involved in the socialization process?

Friebus' results clearly indicated that from the point of view of the intern, meaningful inputs into the socialization process are not limited to those made by the cooperating teacher. Other teachers, pupils, spouses were among the "others" referred to by interns which indicate the wide range of possible socialization influences. In terms of coaching, although the cooperating teacher served as a frequent source of information, so also did the college supervisor and even other teachers at the school. The cooperating teacher was, however, the most frequent referent with respect to coaching.

Legitimation was clearly influenced by fewer personnel than coaching and the most frequently mentioned source of legitimation was the school pupils themselves. "The pupils were not passive entities to be manipulated by the student teachers, but rather they played an active role in the movement of the trainees into the role of teacher" (Friebus, 1977, p. 266). In terms of the major referent for what constituted success or failure in a lesson the pupils themselves were clearly the chief source. There was not a single statement by the interns that a successful lesson was one that met supervisor expectations or pleased a supervisor. "If the pupils appeared to be paying attention, seemed enthusiastic, or responded to questions, the lesson was deemed successful" (p. 266). Friebus also found that, unlike the findings of Becker et al. (1961) with medical students, student teachers did not develop and utilize a strong peer culture as a means of socialization.
In a naturalistic study of student teaching in the secondary school, Wolfe (1982) attempted to identify, classify, and describe how one student teacher and her cooperating teacher made sense of their particular roles, the interactions which occurred and how the setting affected the interactions. In particular, Wolfe found that expectations for the participants' roles were held but not communicated. The intern was apprehensive about her role and viewed the cooperating teacher's role as a helper who shared responsibilities. The supervisor's role was seen to be that of teacher, helper, and evaluator.

The cooperating teacher expressed uncertainty about his role but viewed the intern as a temporary learner and expected experimentation within established parameters. Wolfe also found that in terms of interactions, role assumption, content, preparation and delivery, classroom management and evaluation were all influenced by the past experiences of the participants. Wolfe concluded that the experience of student teaching was incongruent with the theoretical description of student teaching as a time for the analysis of teaching. In fact, socialization into the role of teaching appeared to be the underlying function of the experience.

Karmos and Jacko (1977) attempted to identify people in the lives of student teachers who were perceived as having a positive influence of their role as a teacher, and to determine the nature of the influences which were perceived as significant.

An Instrument, the Significant Others Instrument, was constructed
by the researchers and was administered to a sample of sixty student teachers during the final seminar of the student teaching semester. Results of the study revealed that the significant others were either professionals or non-professionals. Overall, the cooperating teacher was listed as the most significant other with the college instructor mentioned by less than one third of all interns. Interestingly, almost one third of the student teachers could not, or did not, name five persons who had positively influenced them.

Nearly fifty percent all the interns gave "personal support" as the main reason for naming significant others. Karmos and Jacko suggest that the student teachers' greatest need is for personal support and that the fact that non-professionals (such as family) are cited as the main source of such support is entirely reasonable. However, overall, the cooperating teacher was perceived as the most significant influence on the student teacher, with the greatest influence in role development and the least in skill development.

Templin (1979), studied the process of occupational socialization and the physical education student teacher. In particular, Templin focused on the student teacher's Pupil Control Ideology (PCI) prior to and after student teaching, and on the cooperating teacher's role as a socialization agent. A total of twenty eight student teachers, their respective cooperating teachers (N=28) and two control groups, were administered the PCI form both before and after the student teaching experience. From the original twenty eight interns, ten were selected on the basis of their scores (five highest and five
lowest), to be interviewed both during and at the conclusion of student teaching. The ten cooperating teachers of these Interns were also interviewed but only at the conclusion of the semester.

The results indicated that the Interns became significantly more custodial in their pupil control ideology during student teaching. When compared to the cooperating teacher scores, the Interns PCI scores were significantly more humanistic at the beginning of the semester but not on the post test at the conclusion of student teaching. Templin pointed out, however, that "although the socialization process appears to exist, the shift does not indicate simple accommodation by the student teachers to the ideologies of their cooperating teachers" (p. 491). Templin also claimed that the cooperating teacher actually serves as a role model for the student teacher and that

"Regardless of training or entering ideology, the student teacher must maintain the basic requirements of the organization to protect his or her rite of passage into physical education. The student teacher must conform to the authority role if evaluation from the cooperating teacher is to be favorable" (p. 491).

Another study by Templin (1981), focused upon the secondary school pupil as a socialization agent and provided qualitative data revealing the pupil's influence upon the student teacher's disposition towards pupil control or discipline. Twenty eight secondary school physical education student teachers were assessed by pre and post administration of the Pupil Control Ideology Form which consists of twenty Likert items related to schools, teachers, and students.

On the basis of scores on the pre administration of the PCI, ten
student teachers were selected and interviewed throughout the student teaching experience. The five highest scorers were called the custodial group and the five lowest scorers were called the humanistic group. Questions in the interviews were structured around the type and influence of the students taught by the interns.

Results from the PCI scores revealed that, in aggregate, the student teachers became significantly more custodial by the end of the student teaching experience. At the group level, the humanistic group became significantly more custodial over time and the custodial group became significantly more humanistic. Templin claimed that while the shift in the humanistic group was supported by the interview data, such was not the case with the data for the custodial group. On this basis Templin argued that the PCI data for the custodial group was questionable. The interview data revealed that regardless of a student teacher's pre PCI score, all ten students revealed a custodial disposition toward student discipline.

Templin concluded by stating that "this study qualitatively revealed that physical education pupils are, in fact, socializing agents. Physical education students, particularly those who misbehave, socialize the student teacher to maintain or more toward a custodial control orientation" (p. 77). In addition, Templin's data suggested that student teachers are particularly influenced by a pupil's motor ability or achievement level and by a pupil's conformity to student teacher expectations and rules and regulations. Such influence, according to Templin, may foster inequality within the gymnasium because the obedient, capable pupil may become the
constant recipient of intern praise, and the poor performer or disobedient pupil may become the target for intern reprimands or event neglect.

Hoy and Rees (1977) investigated the effects of bureaucratic socialization on student teachers, and were specifically concerned with the possible influence of the student teaching experience on the pupil control orientation, dogmatism, and bureaucratic orientation of the interns. Predicting that interns would become more bureaucratic, more custodial and more dogmatic during student teaching, Hoy and Rees administered three pencil and paper tests to 112 college seniors before and after student teaching. The tests were the Work Environment Preference Schedule (for bureaucratic orientation), the Pupil Control Ideology (a measure of control ideology along a custodial-humanistic continuum), and a short form of Rokeach's Dogmatism Scale (to test whether an individual's belief system is open or closed).

Data were analyzed by means of 't' tests and three hypotheses were confirmed. First, student teachers were significantly more custodial in their pupil control ideology after student teaching. Second, student teacher dogmatism remained virtually unchanged. And third, student teachers had a significantly more bureaucratic orientation after student teaching.

These findings for pupil control ideology were in accord with the results of some earlier studies by Hoy (1967 and 1968). In conclusion, Hoy and Rees (1977) claim that "Until the organizational
structure of public schools and its patent emphasis on bureaucratic procedures and control is changed, teacher education programs in general seem limited to a modicum of success at best" (p. 25).

Kelsler (1981) set out to better understand the attributional patterns of supervising teachers (cooperating teachers) in relation to their student teachers. Kelsler considered that "attributions for teaching success and failure reflect individual causal beliefs, beliefs as to who or what deserves credit or blame, in other words, responsibility" (p. 3). Further, the causal beliefs of cooperating teachers are basic to how they evaluate student teacher performance and how they interact with them.

Two parallel forms of an adaption of Weiner's attributional model for causal sources were distributed to 165 student teachers and their cooperating teachers. Approximately 100 useable tests were obtained for analysis. Results were as follows: First, the student teachers attributed to themselves greater importance for pupil success than they attributed to the pupils, however they attributed failure more to the pupil's ability and effort. Second, cooperating teachers displayed the same bias toward pupil success or failure. Kelsler concludes that when pupils succeed in learning, cooperating teachers were more likely to apportion credit to the student teachers than the interns are themselves. However, when pupils fail to learn, cooperating teachers were less likely to blame the pupils than were the student teachers. Kelsler also claimed the cooperating teachers estimated the difficulty of a teaching assignment more by reference
to pupil ability than to pupil motivation. The relationship between task difficulty and attribution of responsibility was unfortunately not discussed.

Schemp (1983) conducted a study which attempted to understand how the physical education student teacher learns the role of physical education teacher. Specifically Schemp had two main research questions for his study:

1. What modes of student Interaction lead to role satisfaction for the prospective teacher?

2. What modes of student Interaction lead to role competence for the novice teacher?

Data were collected by means of the critical incident technique in which interviewees were asked on three separate occasions to report two specific incidents which occurred during their student teaching, one which dealt with role satisfaction and the other with role competence. Twenty interns provided the incidents during one semester of student teaching.

In answering the first research question, Schemp concluded that:

"Based on the evidence available...the teaching role was most satisfying for student teachers when the students, both individually and as a class, socially and emotionally engaged in a teacher approved activity" (p. 7).

In terms of the second research question, Schemp concluded that student teachers saw role competence "as telling students to work on activities teachers felt appropriate within the teacher-planned lesson and then having students do as they are told" (p. 9).
Typically, Incidents Indicative of role competence were most often associated with the whole class rather than individual pupils. Schemp claimed that the student teacher's desire for classroom efficiency, control and prediction supports the contention by Hoffman (1971) that pragmatic concerns for efficiency, rather than helping pupils learn determines choice of teaching style. Such an assertion is also similar to Doyle's (1979) claim that seeking cooperation rather than pupil learning is the major teacher task.

In general, Schemp's findings are in accord with the findings of lannaccone (1963), Tabachnick et al. (1978), and Templin (1981).

**Ecological Influences**

According to Doyle (1977), learning to teach involves "learning the texture of the classroom and the set of behaviors congruent with the environmental demands of the settings" (p. 51). It has become abundantly clear as a result, in particular, of the work of Doyle and Copeland that classrooms are not neutral places in which an intern can simply try out certain ways of teaching. As the following studies reveal, the classroom itself influences what the student teacher can do and therefore how they learn to teach.

Using naturalistic methods, Doyle (1977) made observations over a three year period during the course of regular supervision of student teaching. A total of fifty eight student teachers were observed on average for one period each week for the duration of student teaching. In particular, Doyle used what he called the ecological approach to search for evidence concerning the function of teacher
behaviors in the classroom, and to emphasize similarities across diverse settings.

Doyle found that the most salient features of the classroom for student teachers were multi-dimensionality, simultaneity, and unpredictability. Student teachers were confronted by groups of pupils with widely different interests and abilities, with different goals and behavior patterns, and with a multitude of different tasks to complete. These demands represented the multidimensionality of the classroom and Doyle claimed that it was not uncommon for an intern to be initially overwhelmed by such demands. Also, many of the classroom events occurred simultaneously, and the need to cope with the simultaneity of classroom demands represented a real concern for student teachers. Many classroom events tended to occur unpredictably and student teachers often found it difficult to cope with interruptions and changes to a planned schedule.

Although there was a variety of strategies used, Doyle found that all student teachers "developed strategies that could be interpreted as attempt to reduce the complexity of the classroom environment" (p. 53). For some interns, the strategies they employed were unsuccessful in reducing complexity. These student teachers tended to ignore the complexity and would often issue directions and then continue on as if compliance had been achieved. Other interns who were successful in reducing complexities, employed strategies which tended to be congruent with, and adaptive of, the multiplicity and simultaneity of the classroom environment. Such strategies included: chunking discrete events into larger units; differentiating among
units in terms of their immediate and long-term significance; monitoring and controlling overlapping classroom events, monitoring and controlling the duration of events; using rapid judgement to interpret events with a minimum of delay.

Interestingly, Doyle found that differences between the adaptive strategies employed by interns occurred even within the same classrooms and that interns were relatively "successful" or "unsuccessful" depending upon how their strategies matched the demands of the particular classroom environments. In this sense, Doyle expressed concern over the use of preparatory experiences in teacher training (for example, tutoring) which bear little or no congruence with the ecological reality of the classrooms in which the student teachers began teaching. These findings are similar in effect to the "going with what works" strategy mentioned by Iannaccone (1973); Tabachnick et al. (1978) Popekowitz (197) and Zimpher et al. (1980).

Copeland (1979) was concerned with the apparent transferability of microteaching skills to the classroom setting. In an earlier study, Copeland (1977) found that the cooperating teachers' use or non-use of a teaching skill seemed to be the primary factor which explained why some student teachers continued to use a particular teaching skill after training while others did not. Copeland suggested that there were two possible answers to the question "what is the process which mediates the relationship between cooperating teacher and a student teacher's use of a skill?" First, that the
cooperating teacher served as a model for the target skill and the intern copied the model. And second, that continued use of a skill acquired in training depended upon the congruence of that skill with the ecology of the cooperating teacher's classroom. A further study by Copeland (1978) attempted to find an answer to the question of whether one or a combination of the explanations was most plausible.

The purpose of the 1978 study was to observe student teachers who: had received microteaching training; whose cooperating teachers presented negative or positive examples of target microteaching skills; and who taught in classrooms in which the target skill was or was not part of the classroom ecology. Thirty two student teachers participated in a microteaching program and were subsequently assigned to classrooms, half of which had cooperating teachers who had a high tendency to use the target skill and half had teachers with a low tendency to use the skill. After teaching for three weeks with their cooperating teacher, each intern was then required to teach in another classroom for thirty minutes a day for five days. In the "extra classroom experience" the interns did not get the opportunity to observe, and therefore model, that classroom teacher. Four fifteen minute audio recordings were made of each intern's teaching in the "extra classroom experience" and data in the form of scores were analyzed statistically by means of a two-way Analysis of Variance.

Copeland's results showed no significant difference between scores of interns who had taught with "high user" or "low user" cooperating teachers. However, significant differences between
scores were found for the ecological context in which the Interns taught. As Copeland suggested, ecological congruence seems to reinforce the student teacher's use of a particular skills and "ecological incongruence may produce aversive consequences that inhibit skill usage" (1979, p. 196). In this sense, Copeland suggested that the low transferability reported on microteaching skills may well be described by the concept of ecological congruence/incongruence.

In another study, Copeland (1980) set out to detect and describe instances in which classroom members adapt their behavior to meet the demands of their classroom environment. The procedures included gathering initial data of typical patterns of teaching-learning behavior in two separate classrooms which were "host" to student teachers. Then, one component of each classroom was systematically altered - namely the Interns were removed and placed in the other classroom. After the exchange of Interns, further data on teaching-learning behaviors were collected. Data consisted of both focused and open ended observations.

The results confirmed the fact that when an Intern's teaching behaviors are incompatible with the established structures of a classroom, then either the Interns behavior or the established patterns will be modified, or both. A process of negotiation was observed in which resolution of apparent inconsistencies were pursued. "Teachers adapted to the pupil's behaviors, or, less often, pupils adapted to the student teachers' expectations" (p. 175).
Copeland contends that the results of this study give further support to the bidirectional nature of influence within classrooms as articulated by Fielder (1975) and Doyle (1978).

McIntyre et al. (1982) conducted an interesting study into the pupil's perceptions of the student teacher influence on classroom environment. Reasoning that the argument concerning classroom complexity and its demands on a teacher, as articulated by Doyle (1977) is of concern within student teaching, McIntyre and his colleagues set out to determine pupil perceptions of possible detrimental effects of both preservice and cooperating teachers on classroom environment.

A sample of twenty two classrooms from five school districts provided 472 pupil responses to a questionnaire which was an adaptation of Stern's Environmental Index. The questionnaire was administered before the student teaching semester began and at the conclusion of fourteen weeks of teaching by the Intern. The results revealed that pupils perceived five of the ten measured variables to be significantly different when the cooperating teacher was in charge compared with when the Intern had complete classroom responsibility.

McIntyre et al. suggested that "...this study indicates that pupils perceive preservice teachers to significantly influence the classroom environment in a less positive direction than that established by cooperating teachers" (p. 5). In particular, pupils perceived the Intern influence on classroom environment as one in which they were less likely to strive for success, to overcome
obstacles, to respect authority, and to think objectively.

In conclusion, McIntyre et al. suggested that "it is not always possible for a preservice teacher to approximate the environment established by the cooperating teacher" (p. 6) and that a change in the classroom environment should be expected during student teaching.

**Intervention Influences**

Whereas the Influences on learning to teach which were revealed in the preceding studies are a product of the Intern just "being there", the Intervention Influences are actively planned for and tested. The following studies represent the research on Intervention Influences in student teaching. Surprisingly, there have been relatively few research studies which have focused on the teaching behaviors of the Intern. Recognizing this fact, Griffin et al. (1981) called for "further study examining the wide variety of effective teaching strategies and the way through which student teachers acquire or fail to acquire these behaviors" (p. 30).

Of particular significance with respect to the study of intervention influences on learning to teach are the group of studies which collectively represent the Ohio State University supervisory research program. This program was significant because of a number of features. First, it was conceived and pursued as a program in which systematic replication was fundamental to advancing knowledge. Second, it employed the research methodology of behavior analysis. And third, it provided clear evidence that Intern teaching behaviors can be changed in a desired direction.
Sledentop (1981), the major adviser for the twelve doctoral dissertations which formed the basis of the research program, summed the program's major results up as follows:

1. Teaching behavior can be defined clearly enough that it can be observed reliably.

2. Observations of teaching behaviors can be made reliably by college supervisors, cooperating teachers or peer intern students.

3. The teaching performance of Interns can be changed during a 10 week student teaching experience.

4. Change was induced by a "package" which included goals, explanatory materials, regular observation, feedback, and graphic display of teaching performance.

5. Maintenance of Intervention induced changes is best achieved by follow-up programming and feedback.

6. There is a limited number of induced changes which are possible within a student teaching term.

7. Student teachers can utilize behavior change principles themselves during their student teaching experience.

8. The data based approach to supervision was generally well received by Interns.

9. Cooperating teachers also responded favorably to the data based approach to supervision.

The following two research studies were conducted as part of the above mentioned program, and illustrate the research design and methodological features characteristic of many of the studies.
Rife (1973) began his doctoral dissertation research with two main questions:

- What was the effect of modeling intervention and feedback on the teaching behavior of student teachers?
- Does a change in student teacher teaching behavior produce a change in pupil behavior?

The study used a multiple baseline design with two student teacher subjects. Data for both the student teachers and their pupils were analyzed as the differences between rates of teacher behavior and percent of appropriate pupil behavior during baseline conditions and after modeling intervention with accompanying feedback. The modeling consisted of Rife himself teaching the class and emphasizing a particular teaching behavior. Feedback was given after a modeling intervention and consistent of instructions, cueing and reinforcement, and graphic feedback.

Rife focused on certain categories of teacher behavior including management, positive feedback for skill attempts, and positive relations to on-task pupil behavior. The primary effort of the interventions was to reduce the number of incidents of negative feedback following skill attempts.

The results revealed that relatively large decreases occurred in categories of negative feedback for skill attempts and negative reaction to off-task pupil behavior. Also, relatively large increases were made in teacher rates of positive feedback for skill attempts and positive reaction to on-task pupil behavior. Rife concluded that modeling and Information feedback, consisting of
graphic information, instructions, cueling and reinforcement, were effective in producing changes in the selected teaching behaviors of the student teachers. Importantly, these induced changes in student teaching behaviors maintained levels of appropriate pupil behavior. Results of this study were subsequently confirmed in a similar investigation by Rife and Darst (1977).

Hutsler (1976), also as a doctoral dissertation, set out to determine the effects of training cooperating teachers in applied behavior analysis on the performance of selected teaching behaviors of elementary physical education student teachers. As an example of what Locke (1983) called ROTE (research on teacher education), the study's independent variable was a package intervention used by the cooperating teachers and the dependent variables were the teaching behaviors of the student teachers.

In addition to changes in Individual Intern's behaviors, Hutsler also compared changes in teaching behaviors for the group of student teachers who received the intervention with those of a control group who participated in the regular student teaching experience. A questionnaire was also administered to both groups to assess the participants perspectives of their student teaching involvement.

The subjects in the experimental group were six physical education students at The Ohio State University. In the term immediately prior to student teaching, each Intern's perspective cooperating teacher participated in a five week training program. The program was designed to acquaint the cooperating teachers with
applied behavior analysis, to give them experience in using a systematic observational recording system, and to familiarize them with techniques for graphing recorded data. When the student teaching term began, the cooperating teachers observed and recorded data for their student teacher in one class period per day. Following baseline measures of certain teaching behaviors the cooperating teachers then intervened with such techniques as modeling, goal setting, verbal and graphic feedback, written materials and cueing and reinforcement.

Hutsler concluded from her results that:

- following training the cooperating teachers were able to observe and record data at an acceptable level.
- as a group, the student teachers who received the intervention made fewer negative behavior interactions per minute and provided a greater percentage of activity time per class period than the group of control student teachers.
- at an individual Intern level of analysis, the regular student teaching experience (those in the control group) did not produce any substantial change in the teaching behaviors which formed the focus of the study.
- in contrast, significant change in teaching performance for five out of the six student teachers in the experimental group was observed.
- cooperating teachers and their interns found the experimental method superior to the conventional method of student teacher supervision.
Another research thrust which had addressed the issue of changing student teacher teaching behavior has been a group of studies using interaction analysis as the independent variable and intern teaching behavior as the dependent variable (e.g., Furst, 1967; Getty, 1977; Mancinl et al., 1978; Vogel, 1976). As illustrative of this group of studies, the Mancinl et al. (1978) study will be reviewed in detail.

Mancinl and his colleagues attempted to determine the effects of instruction and supervision in the practical application of coding interaction analysis on the teaching behavior of student teachers in physical education. Thirty student teachers were randomly assigned to either treatment or control groups. Those in the treatment group, during the first five weeks of the semester, received fifteen hours of instruction and supervision in the application of the Cheffers Adaptation of Flanders Interaction Analysis System (CAFIAS). Students in the control group received fifteen hours of conventional supervisory feedback during the same five weeks. The teaching performance of all subjects was videotaped on three separate occasions: first, during the first three weeks of the semester; second, immediately after the training periods; and third, one month after training was completed. Data were analyzed from the teaching behaviors recorded in the second and third videotapings of each subject.

Using multivariate and univariate analysis of variance techniques in addition to stepwise discriminant function analysis, Mancinl et al. found statistically significant differences between the two groups on most of the CAFIAS variables. They concluded that
significant differences in the teaching behaviors of Interns existed following the fifteen hours of training in Interaction analysis and also one month after the training program. These results are in accord with the results of similar studies by Vogel (1976) and Getty (1977).

An aspect of concern for the study of Intervention Influences, regardless of what constitutes the Intervention, is the maintenance of any induced changes over an extended period of time or across settings. The research of Doyle (1977) and Copeland (1977, 1978, 1979, 1980) in particular is helpful in considering maintenance and transfer. It would seem that unless the environment into which the behaviors are to be transferred or maintained are congruent with that in which the behavior was acquired then the chances of successful transfer or maintenance would be reduced. Unfortunately, although it has been clearly demonstrated that Intern behaviors can be changed in desired directions the transferability and maintenance of these changes has received little research attention. Only the work of Copeland (1977-80) provides us with a sense of understanding of the possible limitations to such attempts.

One other study in this Intervention influence group which is worthy of attention is the Investigation by Nichols (1976) of the effect of different feedback techniques in supervising student teachers. The study was designed specifically to compare the effectiveness of five different methods of inducing a positive behavioral change in student teachers. In essence, this study was a
research on teacher education example of the methods type research so prevalent in the early research on teacher effectiveness (Locke, 1979).

Nichols (1976) investigated the effect of feedback techniques in supervising student teachers. The study was designed specifically to compare the effectiveness of five different methods of inducing a positive behavioral change in student teachers.

Sixty student teachers were randomly assigned to five treatment groups, each having a different method of observation and feedback. Groups A and C received feedback from the college supervisor. In treatment C the supervisor watched the actual lesson; in treatment A only a videotaped recording of the lesson was viewed. The same procedure was followed for groups B and D except the cooperating teacher was the source of feedback. The fifth group (E) acted as the control. In each experimental treatment group (i.e., A, B, C & D) the feedback was based on the Tuckman Teacher Feedback form.

Each group was observed and given feedback three times during the term, at three week intervals. The independent variable was the method of observation and feedback and the dependent variable was the student teacher's gain score on a Student Opinion Questionnaire which was completed by class pupils. Analysis of variance was used to determine any significant differences between groups gain scores.

On the basis of his findings, Nichols concluded that the college supervisor was the best source of feedback and the videotape recording and a written instrument was the best media for feedback in making a positive change in the behavior of student teachers. A
disappointing feature of this study was the fact that the dependent variable was not based on systematic observation of teacher performance. The use of academic learning time, for example, would have been more appropriate as a dependent variable than the opinion of class pupils.

Summary

This review was restricted to empirical studies which focused in some way on the learning to teach function of student teaching. First a number of studies which specifically researched the socialization influences on learning to teach were presented. Using naturalistic research methods, four studies revealed consistently that student teaching socialized Interns into what Zelchner (1980) called the development of utilitarian teacher perspectives. An anti-theoretical "going with what works" attitude prevailed among Interns. Other studies also using naturalistic methods found that there were many influences (e.g., pupils) on an Intern learning to teach in addition to the cooperating teacher, and that student teaching was not, in reality, a time for the analysis of teaching. The influence of pupils and the cooperating teachers as socializing agents was also supported by two research studies which used both psychometric and naturalistic data. In addition, two studies which used psychometric instruments revealed that although the Intern's attitude to pupil control became more like that of the cooperating teacher, cooperating teachers were perceived to have their least influence of the development of teaching skills.
A second group of studies focused on ecological influences on learning to teach and essentially they were all in agreement that the ecology of the classroom played a dominant role in determining what teaching skills and behaviors were possible. The limited success of transferring behaviors learned in microteaching settings into real classrooms was found to be explained in terms of ecological mismatching - that is, the behaviors were not normally part of the classroom ecology and were rejected or modified accordingly. Another study revealed that the presence of the student teacher was perceived by pupils as having a negative influence on the classroom ecology.

The third group of research studies related specifically to experimental efforts to change intern teaching behaviors. In particular, studies using applied behavior analysis and studies using interaction analysis as interventions were reviewed, and both groups of studies revealed that the teaching behavior of interns can be changed by such techniques. Issues relating to the maintenance of such behaviors were also discussed.
CHAPTER III

THEORY: ITS NATURE AND PURPOSE

In this chapter an attempt is made to consider what is understood by the term "theory", and to outline the main functions of theory within science in general, and educational research in particular. Major types of theory are discussed and also the procedures involved in theory construction. In addition, a set of criteria for evaluating theory is presented and an example of theory construction within the field of teacher education is outlined.

Such explanations are considered to be necessary to provide a background in which to locate the nature of the theory development within this dissertation.

The Meaning of Theory

Theory, as used in common language, has a variety of meanings such as: "a kind of hypothesis concerning why something happens" (e.g., "I have a theory that Mary would perform better if she was separated from Jane."); a plan of action (e.g., "My theory of education suggests that all schools should be co-educational."); the consistent and logical formulation about man's place in the world (e.g., a philosophical theory); or a set of propositions derived from empirical findings (e.g., the kinetic theory of gases).

According to Reynolds (1971) the term theory is frequently used
to refer to (1) vague conceptualizations or descriptions of events or things, (2) prescriptions about what are desirable social behaviors or arrangements, or (3) any untested hypothesis or idea (p. 11). Reference to a set of abstract concepts used to describe phenomena as a theory is considered inappropriate for it fails to provide for all the purposes of scientific knowledge. Reynolds also claims that for most people, scientific knowledge should provide more than a typology of events and things. It should also enable prediction of future events, explanations of past events, a sense of understanding about causality, and the potential to control events.

Yet even theorists and scientists find it difficult to agree on a common definition of theory and as Snow (1973) comments "there appears to be almost as many definitions of theory as there are people concerned with theory." (p. 78).

For the purposes of this dissertation, the conception of social science theory as explicated by Zetterberg (1963) will provide the working notion of the term theory. In essence, a theory is an interrelated set of propositions. A proposition is a relationship between two or more concepts, and a concept, or term, is the primary language unit.

The Functions of Theory

A fundamental characteristic of theory is that it tends to be both a tool and a goal (Marx, 1963). That is to say theory is sometimes a useful or even an essential aid in directing empirical investigations (the tool function) and can also be valued as a
worthwhile objective in its own right (the goal function). The generally accepted proposition that theories guide research by generating new hypotheses or predictions is evidence of the tool function. The proposition that theories integrate and order existing empirical laws is evidence of the goal function.

Incorporating both means and ends functions of theories, Zetterberg (1963) claims that theorizing has four main functions. First, a theory is useful in providing a parsimonious summary of anticipated and actual empirical findings. Second, a theory can coordinate research so that separate findings can contribute optimally to a theory's plausibility. Third, a theory can be used to locate the most productive and manageable propositions for future empirical testing. And fourth, a theory provides a specific limited area in which the researcher can identify false propositions when an hypothesis fails to meet an empirical test.

Kaplan (1964) also claimed that theory is both process and product.

"Theory, therefore, functions throughout inquiry and does not come into its own only when inquiry is successfully concluded. It has a greater responsibility than that of an accessory after the fact: It guides the search for data, and for laws encompassing them." (p. 302)

According to Dussault (1970), the essential function of a scientific theory is to explain the laws or phenomena with which it is concerned. However, while it is not uncommon to find theory which makes possible the prediction of the phenomenon it explains and even allows a scientist control over these phenomena, scientific theory does not necessarily result in improved prediction and control.
Dussault cites Darwin's theory of evolution and Kepler's theory of planetary motion as two cases in point.

The function of theory in educational research

As the following statement by Conant (in Kaplan, 1964, p. 303) reveals, the place of theory in science seems rather unequivocal:
"The history of science demonstrates beyond doubt that the really revolutionary and significant advances came not from empiricism but from new theories." Within educational research, however, it seems that such confidence in theory is by no means universal. Glass (1971) exemplified a negative position toward theory when he claimed that: "...we who call ourselves educational researchers should turn away from elucidatory inquiry in all areas of education." (p. 1).

Elucidatory inquiry is that which is directed toward the construction of theories, and, according to Glass, such inquiry has been unproductive in education.

Mitzel (1977), on the other hand, claims that educational research should in fact turn toward theory rather than away from it.

"In education, researchers are not providing us with new tested knowledge for increasing pupil learning. A deep running viable theory would help to accomplish this goal if we could establish one that was consistent with the observable phenomena." (p. 16)

Similarly, Association for Supervision and Curriculum Development's commission on Instructional Theory (Gordon, 1968) claimed that: "Perhaps many of the inadequacies of research on teaching at the present time stem from the lack of theories of instruction formulated in scientific terms." (p. 26)
A similar, although more forceful argument was given by Suppes (1974) on the place of theory in educational research. Suppes gave five reasons why he thought educational research was in need of theory. First he argued from analogy with the use of theory in the natural sciences. The importance of theory in the natural sciences is suggested as an excellent example for educational research. Second, theory in science has provided a reorganization of experience in changing our perspectives of what is important and what is superficial. Third, one of the thrusts of theory enables us to show that what appear on the surface to be simple matters of empirical investigation, on a deeper view prove to be complex and subtle.  

"It has been to a partial extent, and should be to a greater extent, a primary thrust of theory in educational research to seek mechanisms or processes that answer the question of why a given aspect of the education works the way it does." (p. 5)

Fourth, Dewey's problem solving conception of inquiry which attempts to replace classical concepts of scientific theory is inadequate in Suppes' view. And fifth, bare empiricism is, in and of itself, trivial. Without theory, "these bare facts duly recorded lead nowhere...they do not provide methods of prediction or analysis." (p. 6). Smith and Geoffrey (1968), in their research into the complexities of an urban classroom, made clear their belief in the importance of theorizing when they claimed that "ultimately a theory of teaching is our goal." (p. 250). Moreover, they argued that as theorizing improves, gaps between research and practice will be narrowed via the process illustrated in the following model of the place of theory in the educational research domain.
Whether or not such a symbiotic relationship between educational theory and practice is possible in the manner outlined by Smith and Geoffrey (Figure 1) is certainly conjectural, and essentially the influence of theory on practice is an issue for empirical investigation.

**Types of Theory**

Just as there are numerous meanings given to the term "theory", there is a large number of types of theory. It seems that many of those who write about theory have their own version of what constitutes different forms of theory. What follows is a description of the types of theory articulated by three authors. In essence these examples are representative of the main conceptions and in themselves they show degrees of commonality and difference. See Table 1 for the relationship among the types of theory.

Reynolds (1971), in his book *A Primer In Theory Construction*,

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**Figure 1**: A process model integrating educational research styles, educational practice, and educational theory. (From Smith and Geoffrey, 1968)
offers three dominant conceptions of scientific theory. First, the conception that scientific knowledge is essentially a set of well supported empirical generalizations or laws and theory from such a conception can be referred to as a "set of laws" form of theory. Since all laws are directly supported by empirical research all concepts used in laws must have operational definitions. Reynolds suggests that the degree of empirical support for abstract theoretical statements is fundamental to this form of theory. Only those empirical generalizations for which there is "overwhelming" support are considered laws. Such rigorous requirements are, however, considered to be a disadvantage of the "set-of-laws" form of theory. For example, since every concept in a law must have at least one operational definition this prohibits the use of any hypothetical construct or unmeasurable concept (Reynolds, 1971).

Scientific theory can also be conceived as an interrelated set of definitions, axioms and propositions (derived from the axioms) and this form of theory is called the 'axiomatic form'. More specifically, the axiomatic theory includes a set of definitions which include theoretical concepts and operational definitions; a set of existence statements that describe the scope conditions or context in which the theory is considered applicable; a set of relational statements which are of two forms (I) axioms - statements from which all other statements in the theory may be derived and (II) propositions - statements which are derived from axioms; a logical system which relates all concepts within statements and is used to derive propositions from axioms. As Reynolds points out, it is
extremely difficult to find examples of axiomatic theory relating to social or human phenomenon. However, according to Reynolds there is a number of advantages of axiomatic theory over set-of-laws theory. First, it is not necessary that all concepts be measurable and hence the axiomatic form can include hypothetical constructs. Second, a smaller number of statements is required to express scientific knowledge. Third, research may be more efficient since empirical support for any one statement provides support for the entire theory. Fourth, axiomatic theory enables the theorist to examine all of the consequences of the axioms.

The "causal process form" of theory differs from the axiomatic form mainly in that all the statements are considered to be of equal importance. There is no hierarchy of statements as there is with axioms and propositions. In particular, the causal process form of theory includes a set of definitions which include both theoretical constructs and operational definitions: a set of existence statements that provide the context in which certain causal processes are expected to occur and; a set of causal statements, with either probabilistic or deterministic relations between independent and dependent variables. Reynolds claims that this form of theory is suitable for the four purposes of science; it provides a typology, a logical explanation and prediction, potential for control, and a sense of understanding.

All three of the Reynolds' types of theory represent formal and systematic processes of theory conceptualization and as such they demand a degree of rigor which is only to be found in the higher
forms of theorizing as described subsequently by Nagel (1969) and Snow (1973).

According to Nagel (1969) there are four senses or types of theory which can be identified. First, in what Nagel calls the more advanced natural sciences such as physics, chemistry and biology, theory is used in the sense of a system of universal statements. Such statements are usually abstract in nature but capable of explaining some empirically established regularities in the real world and to predict with varying degrees of precision individual occurrences. Examples of this sense of theory would include Newtonian mechanics in gravitational theory, and the gene theory of heredity in biology.

Theory in the second sense of the word is more restrictive than the first and refers to an individual law or generalization. In this sense of theory single statements assert some relation of dependence between variables. Although of more limited application than theory in the first sense, these theories are of a similar order and their validity depends largely on empirical verification. The law of supply and demand in economics and Boyle's law in physics are examples of this sense of theory.

Nagel's third sense of theory is less systematic in that it refers not to a set of systematically organized statements or a single explicitly formulated generalization but instead is characterized by an attempt to identify and designate the factors constituting the major determinants of the phenomenon being investigated. Keynesian economic theory is said to be an example in which major factors upon which the economy supposedly depends are
specified without any explicit statement about relationships among them.

The fourth sense of theory is that in which any more or less systematic analysis of a set of related concepts is called theory. Elaboration and clarification of initially vague concepts with the aim of explicating the major components of the question under consideration is essentially the main task of this fourth form of theory. Statistical theory and a theory of knowledge are examples of this sense of theory.

Snow (1973) in a chapter on theory written for the Second Handbook for Research on Teaching distinguished among six grades of theory which, like Nagel's senses of theory, range from more formal and systematic forms to those that are less specific or rigorous. Snow claims that while

"The six grades reflect an abstract judgement as to the probable long range importance of each kind of theoretical statement for behavioral and social research in general and for research on teaching in particular. But this is not to say that some particular statement classed here as of lower grade may not prove to be far more valuable in the long run than some particular statement from a higher grade level." (p. 82)

"Axiomatic theory" is characterized by a set of primitive undefined concepts and a set of axioms or postulates from which empirically testable theorems can be derived. Identical with Reynold's (1971) axiomatic form of theory, and in essence the same as what Kaplan (1964) calls "hierarchial theory", such theories are virtually unknown in education but are clearly portrayed by Snow as a goal to which educational research should aspire. The functions of
theory outlined by Zetterberg (1963) and described earlier on page ?? were directed toward this higher form of theory. It should be understood that while axiomatic theories are often stated in mathematical form, they can also be strictly verbal.

"Broken axiomatic theories" can be of two kinds. They can be formal theories 'on the way out', meaning that evidence for them is recognized as insufficient or contradictory, but their usefulness remains by virtue of the fact that they continue to offer productive hypotheses. Or they can be growing theories which have not been fully axiomatized because their authors consider it more important in the early stages to maintain interesting substantive features than to seek logical or mathematical parsimony. Snow considers that this form of theorizing "often results from eccelecticism; it is likely to be the highest form of theory found in research on teaching for some time to come." (p. 85)

"Conceptual theories and constructs" is Snow's version of what Kaplan (1964) called "concatenated theory". In this form of theory new concepts are proposed to simplify the explanation and description of relationships among observed variables. Significantly, not all constructs can be given operational definitions and their nature only becomes elaborated as research and theory proceed. The result of this process is a conceptual network of constructs such as are found in Festinger's theory of cognitive dissonance.

"Descriptive theories and taxonomies", as a form of theory, are characterized by the systematic description of phenomena produced through a process of classification and discrimination. These
conceptual networks are classified of a lower order than conceptual theories because they do not introduce new theoretical constructs for explanatory purposes. Snow classes Bloom's taxonomies, Guilford's structure of intellect and Gagne's listing of types of learning as examples of this form of theory.

"Elementism" is characterized by the attempt to reduce the definitions of variables and the relationships between them to the most elementary units possible. Such a form of analysis is claimed to be the prerequisite to descriptive theory and taxonomies. Snow claims that a list of teaching skills developed experimentally by McDonald and Allen (1967) is an example of this form of theorizing. Snow also argues that while the specification of performance criteria and behavioral objectives, the identification of individual steps in programmed instruction, and the delineation of specific teaching skills are all vital steps in research and theory development, they do not, in and of themselves, constitute an integrated understanding of the processes of teaching and learning.

"Formative hypotheses". As the lowest form of theorizing, the formulation of hypotheses is suggested to be probably the first step in problem solving of any kind. Some of the hypotheses can be tested and others cannot, however, they all have a claim to a role in theorizing if they are productive of research.
The relationship among the types of theory identified by the three authors is shown in Table 1 below.

<table>
<thead>
<tr>
<th>Degree of formality, systematization and rigor</th>
<th>Reynolds</th>
<th>Nagel</th>
<th>Snow</th>
</tr>
</thead>
</table>
| High                                           | - Set of laws  
|                                               | - Axiomatic  
|                                               | - Causal process  
|                                               | - Universal statements  
|                                               | - Individual law or generalization  
|                                               | - Axiomatic  
|                                               | - Broken axiomatic  
|                                               | - Conceptual theories and constructs  
|                                               | - Analysis of a set of related concepts  
|                                               | - Descriptive theories  
|                                               | - Formative hypothesis  |
| Low                                            | - Identification of the  
|                                               | - Conceptual theories  
|                                               | - Formative hypothesis  |

Table 1: Relationship among types of theory described by Reynolds (1971), Nagel (1969), and Snow (1973)

The Construction of Theories

Given a number of definitions of theory and a range of types of theory it seems entirely predictable that the construction of theories would be similarly controversial. As Snow (1973) suggested ten years ago "To be sure there is not now general agreement on the best ways to build improved theories and models, or to apply them in improving research," (p. 77) and the situation seems no better today.
Although a popular notion of theorizing "shows the scientist pondering his observations, generalizing from data, forming these generalizations into systems of concepts and relationships, and conducting crucial experiments designed to test deductions from the systems thus created" (Snow, 1973, p. 78), there are those who consider creativity an important input into theorizing. Dussault (1970) for example claims that scientific theories may be produced by the creative imagination of the scholar and Rogers (1962) suggests that a necessary condition for creative scientific theorizing is immersion in the field of inquiry:

"He lives it. He does more than 'think' about it - he lets his organism take over and react to it, both on a knowing and on an unknowing level. He comes to sense more than he could possibly verbalize about his field, and reacts organismically in terms of relationships which are not present in his awareness." (Rogers, 1962, p. 115)

Dussault (1970) also claimed that theories can be borrowed or transferred from other fields, and he outlines the categories of theory suggested by Maccla (1965) to exemplify this position. Maccla calls the simple transfer of a theory from one field to another without modification - "reductive theory". Theory can also be deduced from one field to another whereby the deduced theory is consistent with but not similar to the theory from which it was deduced. Secondly, a "retroduction" form of theory is possible whereby certain elements of a validated theory are selected and applied to a new field. The retroduced theory may include elements not included in the original theory and not include certain elements of the original theory.
A more elaborate discussion of different methods of theory construction is presented by Marx (1963). Marx considered there to be three basic elements in the construction of scientific theory. Observation, which is recognized as fundamental to all science, should, in Marx's view, progress from the everyday ambiguous to the experimental in which greater control is exerted to reduce ambiguity. Constructs should increase in operational specificity with the eventual development of explicit empirical referents, and hypothesis testability should progress from intuitive to rigorous. This striving for control, operational specificity, and testability is, according to Marx, the goal of science.

Marx distinguishes between four types of theory construction procedures which differed primarily in the direction of relationship between conceptual (theory-language) and empirical (data-language) levels of analysis. Deductive theorizing is characterized by an emphasis on a well-defined conceptual structure that suggests hypotheses to be empirically tested. Although this form of theorizing is based on minimal empirical grounds there is an explicit intention of the theorist to use the data generated by the theory to modify and refine the theory.

Inductive theorizing consists essentially of summary statements of empirical findings. Theorizing is only minimally influenced by deductive logic and the primary emphasis is on the acquisition of facts which produce a set of general inductive principles. Marx cites the work of Skinner (1956) as an example of inductive theorizing.
Marx's third type of theory construction procedure is termed functional theorizing. In this mode, both empirical and conceptual activity are emphasized and are both given equal status.

"In general, this position would attempt to salvage the positive values of a limited kind of theory construction, closely tied to empirical research, while eschewing the dangers associated with too premature and close attachment to logico-deductive procedures." (Marx, 1963, p. 17)

Theorizing from a model or conceptual structure which is usually borrowed from another field represents the fourth type of theory construction procedure. In this mode the model provides the empirical investigation with some firm guidelines, "but strictly speaking, no effort is made to test the 'truth value' of the model itself." (p. 39)

Theory construction in educational research

Yinger (1978) has claimed that when one examines the status of contemporary theory building in research on teaching "one finds little conceptual activity." (p. 8) Yinger suggests there are two reasons for this paucity of theoretical activity. Firstly, he considers that for most researchers the task of theory construction is imposing and threatening and that this view of theory is a product of lack of training in thinking about and doing theory together with a misconception that all theories are grand, formal pieces of work of the level of Hull's and Skinner's theories of learning, Piaget's theory of cognitive development, or Freud's theories of personality. Exposure to these formal theories creates an impression that theory development is something that is the preserve of the gifted few, and
then only after years of research and deliberation.

Secondly, Yinger claimed that educational researchers have a misconception about the role of theory in science. "Theory is most commonly perceived as an outgrowth of research rather than as a tool for research, a product rather than a process." (p. 9). According to Yinger, researchers have been preoccupied with data gathering and have largely avoided the development of theory. Yinger suggests that the use of "grounded theory" as a method of theory building (see Glaser & Strauss, 1967) is an effective way to begin the task of theory construction in research on teaching.

**Dussault's theory of supervision in teacher education**

In a unique example of theory development in teacher education, Dussault (1970) developed a theory of supervision in teacher education programs based on Carl Rogers' theory of therapy and personality change. Dussault claimed that his theory aims at explaining and predicting only some of the variables of one function of supervision in teacher education and as such it is a middle-range theory. The phrase middle-range theory refers to a theory which according to Merton (1957) is

"Intermediate to the minor working hypotheses evolved in abundance during the day-to-day routines of research, and the all inclusive speculations comprising a master conceptual scheme." (cited in Dussault, 1970, p. 28)

Dussault's theory is also of the retroduced variety (Maccla, 1965) in that elements were selected from the validated model theory (Rogers, 1950) to fit the requirements of the field of supervision to
which it was applied. Not all the elements of the original Rogerian
time found a place in Dussault's theory, whereas on the other hand,
his theory contains elements not found in Rogers' theory.

Moreover, because Dussault's theory is one in which the
"component laws enter into a network of relations so as to constitute
an identifiable configuration or pattern" (Kaplan, 1964, p. 298) it
is defined in Kaplan's terms as a concatenated theory. According to
Kaplan "a law or fact is explained by a concatenated theory when its
place in the pattern is made manifest" (p. 298). In the Snow (1973)
classification of theories this would be an example of the
"conceptual theories and constructs" form. For Reynolds (1971),
Dussault's theory would be closest to a 'causal process form' whereas
for Nagel (1969) the similarity is with his second sense of theory.

As a reproduced, middle-range, concatenated theory of supervision
in teacher education programs, Dussault's theory predicts changes on
twenty-two variables of supervisee personality and behavior if five
conditions exist and continue throughout the supervised professional
laboratory experiences. Operational definitions were also suggested
for the possible empirical testing of twelve of the seventeen
hypotheses of the theory and tentative operational definitions
suggested for four other hypotheses. Using Snow's (1973) criteria
(see page ??) to evaluate Dussault's theory reveals that on all
criteria the theory appears sound. No doubt there would be some
debate over the meaningfulness of some of the psychological variables
which are claimed to be quantifiable (see for example, Johnson and
Pennypacker (1980)), however, such argument would not detract from
the soundness of the procedures used to develop the theory.

Although Dussault made no attempt to formally test his theory he does claim that the development of the theory is in and of itself useful. "When a scientific theory is considered as a means for research, its value consists in its capacity to suggest, stimulate, and direct research or relationships that have not yet been observed." (p. 254) Further, Dussault considers that "the revision or rejection of this theory, if required by empirical evidence, should be welcomed since it would signify a new scientific conquest in the field of supervision in teacher education" (p. 257). It is within this possibility of a contribution to teacher education that the present study is placed.

Criteria for Evaluating Theories

A set of criteria for evaluating theories can serve two basic purposes. First, by indicating the formal properties that a theory should possess such criteria can provide a guide for those Interested in constructing their own theory. Second, they provide a basis for evaluating a theory when it has been developed (Gordon, 1968). The following criteria are those which Snow (1973) compiled from the ideas of Kaplan (1964), Lachman (1960), and Gordon (1968) and as such they can represent a comprehensive statement of what is important in evaluating theories.

1. The statement of a theory should make explicit its postulates and the definiton of terms used in these postulates. It should minimize the number of undefined primitive terms and seek
operational definitions of all relevant variables.

2. The boundaries of the theory should be made explicit. Delineation of the range of phenomenon to which the system is supposed to be applicable.

3. A theory should have internal consistency as a logical system.

4. A theory should be consistent with existing empirical data and the empirical sources of the theory should be clearly documented in detail.

5. A theory should be capable of generating specific hypotheses and predictions. "Other things equal, we should prefer the theory that most enriches research on teaching with interesting hypotheses." (p. 104)

6. A theory should be testable. This requirement is met if theorems are stated in such a way that it is possible to collect data to disprove them. However, "theories and models containing variables that are not yet operationalized may still be useful." (p. 109)

7. A theory should be parsimonious - the simplest of alternative explanatory propositions should always be accepted. Theories should become more complex only as indicated by evidence.

8. A theory should be quantifiable. Snow considers that while it is recognized that many theories consist of verbal qualitative constructions the ultimate need for theories that express quantitative relationships among variables must be stressed. He suggests that through quantification, ambiguities and contradictions can be exposed.
Snow claims that there is often misunderstanding of the importance of rigor, parsimony and quantification and he draws heavily on Kaplan's (1964) discussion of these shortcomings in the following criteria.

9. Unnecessary symbolization should be avoided. What might be economic for some might be confusing for other individuals.

10. Unnecessary formalization should be avoided. An overemphasis on rigorous form may hinder conceptual development.

11. Oversimplification should be avoided. Granted theories and models are always simplifications of phenomena but there is a limit to how useful a theory can be when oversimplified.

12. Vigilance is required when theorizing by means of models because models contain irrelevant features as well as essential features and it would be unprofitable to be led to research irrelevant components. Kaplan (1964) alludes to these problems in what he calls the dangers of "map-reading" models.

Chapter Summary

In this chapter it was argued that theory is both a tool for directing investigation and also a goal of research. Within educational research there is disagreement over the value of theorizing, however, among critics of educational research, support is more typical than censure.

A number of types of theory were presented as described by three dominant authors on theorizing. In essence, the types of theory identified by the authors were located on a continuum which represented theories which were formalized and systematic to those
which were less specific and rigorous (see Table 1).

The means of developing or constructing theory was also discussed and again there were difference processes indentified by different authors. Yinger's (1978) reasons for paucity of theorizing in educational research were reported and Dussault's (1970) theory of supervision in teacher education programs was presented as a unique example of theorizing within research on teacher education.

Finally, a set of criteria for evaluating theories was outlined which has applicability for evaluating such theorizing as that of Dussault and, most importantly, the task theory of student teaching which forms the main focus of this dissertation.
CHAPTER IV
THE DEVELOPMENT OF THE TASK THEORY
OF STUDENT TEACHING

With some understanding of the nature of theory and theory construction it is now appropriate to explain the development of the theory, which forms the focus of this dissertation. In this chapter, the evolution of the task theory of student teaching is outlined. In particular, Doyle's concepts of task are discussed from both conceptual and empirical perspectives and two empirical studies from the physical education context are presented. The specific statements and hypotheses of the task theory are presented in schematic model form as is the pattern of relationships which were thought to exist between constructs.

Evolution of the Task Theory

Unlike the Archimede's principle, which is reported to have been discovered in one insightful moment in a bath, the task theory of student teaching has had a rather unspectacular and prolonged evolution. Perhaps the original antecedents lie in the researcher's long personal history of involvement of student teaching supervision. More recently, in the spring of 1982, the researcher conducted a "mini-ethnographic" study ("mini" in the sense that it was conducted as part of a ten week course on naturalistic inquiry) of supervision
In student teaching and from this study came further insights into the process of student teaching. Almost concurrently with the mini-ethnographic study, the researcher began to consider that the concepts of task which Doyle (1979) had described within classroom settings might also have applicability within student teaching, when student teaching was considered as a teaching/learning setting for the intern. A discussion of Doyle's concepts is provided on pages ...... of this chapter. During the winter quarter of 1983, the researcher first began to articulate a theory of instructional supervision within student teaching which included the major concepts of task as developed by Doyle. In essence, that theory was an attempt to explicate the possible relationships between task risk, task ambiguity, formal accountability, classroom ecology, and the degree of congruity between real and stated tasks as they relate to 'supervision as teaching' (a term used by Dussault (1970) to refer to the instructional function of supervision). It seemed reasonable to suggest that in many respects student teaching placed an intern into a position of learner not unlike that of a classroom pupil. Supervisors and cooperating teachers expect the intern to do certain things and consequently arrange tasks in the Doyle sense of the term. It also seemed plausible that such tasks might have ambiguity and risk for the intern just as certain classroom tasks have for pupils. Furthermore, the notion of accountability seemed to also have applicability for the intern as it does for classroom pupils. Doyle's (1977) notion of classroom ecology also seemed relevant since it related to both pupil and teacher behaviors (in this case the
teacher would be the Intern).

Towards the end of the winter quarter a decision was made to further develop the task theory and to attempt to test (at a provisional level) the theory as a dissertation project. A decision was also made to expand the frame of reference of the theory from a specific focus on Instructional supervision within student teaching to a more general focus on student teaching as a process. Given that factors other than the improvement of teaching skills are known to be significant within student teaching (for example, socialization into the role of teacher, see McIntyre, 1983), it was reasoned that the task theory should be able to explain all tasks within student teaching and not only those of an instructional nature.

Following this general explanation of the history of the evolution of the task theory it is now necessary to provide details of the specific antecedents - namely the concept of tasks and its explicative power in various settings.

Doyle's Concepts of Task

For a number of years, Walter Doyle (1977-1981) has been critical of educational research which fails to consider what he has called the "ecological context" in which teaching and learning take place. Using naturalistic research methods, Doyle has inductively developed a set of concepts which he considers to be powerful explanations of the way classrooms operate. Essentially, the concepts have evolved from Doyle's (1977) conviction that pupil learning in classrooms can best be explained by understanding what pupils do and why. Doyle
considered pupil behavior to be a process-mediating variable and he criticized (Doyle, 1979) the unidirectional view of influence in classrooms - namely from teacher to child - which is characteristic of much educational research.

The fundamental focus of analysis in Doyle's work is on what he calls a "task". A task is "a set of implicit or explicit instructions about what a person must do to successfully cope with a situation" (Doyle, 1980, p. 2). In other words a task is defined in terms of (a) a goal and (b) a set of operations necessary to achieve the goal. It is important to note the difference between the Doyle concept of task and the more common usage of the term (e.g., Bossert, 1979) which refers to what teachers and students do in classrooms. Indeed, Bossert's work on tasks (1975, 1977, 1979) would be classified by Doyle as research on activities and not tasks.

An activity designates bounded segments of classroom time and can be described in terms of the physical space in which they occur (e.g., seatwork), the number of participants (e.g., small group discussion), the resources used (e.g., activities using climbing apparatus), or the content focus (e.g., mathematics, physical education). In other words, the concept of activities..."refers to distinctive patterns of overt behavior of teachers and students in classroom" (Doyle, 1979b, p. 45).

The two terms, task and activity, are often used interchangeably within classroom research and Doyle (1978) is deliberate in distinguishing how, for analytic purposes, tasks differ from activities.
"A study of activities, for example, might report that a student spent a given amount of time listening to a teacher lecture. A study of tasks would provide grounds for hypothesizing about what the student might have learned from listening to the lecture" (Doyle, 1978, p.2).

A lesson typically includes a number of activities which in turn may include a number of different tasks. Figure 2 illustrates this concept.

![Diagram](image)

**Figure 2**: Schematic relationship among lessons, activities and tasks.

Alexander (1982) conceived activities as episodes in which resources are organized in certain ways and that the situation in which a given task is to be successfully accomplished will be
Influenced by the nature of the situation conditions in which the task is performed. (See Figure 3.)

![Diagram showing the relationship between human resources, temporal resources, and material resources. The shaded area represents the situation in which a given task must be accomplished.]

Figure 3: The relationship between an activity's arrangement of resources and the situation for task accomplishment

(After Alexander, 1982)

According to Alexander, tasks represent or define, for individual students, the aspect of the activity which is experienced and in this sense they play a role as the "central treatment mechanism in classrooms" (Doyle, 1980, p. 118).

When a number of tasks have a common focus, they can collectively be called a "task system". Doyle (1981) claimed that there are two
main task systems operating within classrooms. One was identified as a "management task system" (tasks which are non-academic in nature and attempt to organize and direct individual behavior) and the other an "instructional task system" (tasks related to skill or knowledge to be acquired). These two tasks systems tend to overlap in practice (Doyle, 1981) and collectively are referred to as the "classroom structure". Figure 4 represents the relationships between tasks, task systems, and classroom structure.

Figure 4: Relationship among tasks, task systems, and classroom structure.
The generalizability of these two task systems to physical education class settings has been empirically substantiated by Tousignant (1982) and Alexander (1982).

**Real tasks, stated tasks, and accountability**

It is often the case that what the teacher states as the task and what the pupils do are incongruent. Within this context Doyle distinguishes between real tasks and stated tasks. A stated task is what the individual is expected to do (according to Doyle's 1981a definition of task this will include both explicit and implicit expectations. Note the modification of this definition on page ???) whereas the real task is the response the student actually emits in order to cope successfully with a situation. The example Doyle (1979) gives is that of an art lesson in which the lesson goal was for students to learn the effects of color on emotion (i.e., a task involving understanding). If however the teacher rewards verbatim recall of textbook definitions, the real task actually becomes one of memory and not understanding.

An essential feature which relates to the congruence between real and stated tasks is the notion of accountability. "In the absence of accountability, risk is removed and the task system is suspended" (Doyle, 1979, p. 23). That is, regardless of what the teacher says he expects the students to do, what he/she holds them accountable for determines the nature of the real task. Doyle suggests that "the proximal task for students in classrooms is to produce acceptable answers" (p. 18) and that what the teacher actually accepts as an
answer determines the real learning tasks in the classroom.

Worsham and Evertson (1980), in their study of systems of student accountability for written work in junior high school English classes, found that five dimensions of accountability distinguished the management systems of the more effective verses less effective English teachers. Similarly, Doyle (1981a) identified the importance of accountability, operationalized in the context of answering occasions, in his study of how writing tasks were accomplished in a junior high school language arts class. An answering occasion was defined as "a point at which work on a particular theme or topic was to be turned into the teacher for a final grade." Doyle observed that accountability appeared to drive the task system as students vigorously questioned teacher statements related to grading requirements while appearing to ignore (at least not writing down) other information which was not related to grading.

Alexander (1982) pointed out the conceptual similarity of Doyle's answering occasion and Kounin's (1970) concepts of accountability and group alerting. Alexander also gave a detailed analysis of the requirements for accountability and suggested that accountability will only affect the likelihood of task accomplishment when it is coupled with the reliable arrangement of consequences.

Task risk and task ambiguity

According to Doyle (1981), tasks which have academic outcomes can be defined as an exchange of performance for grades. Moreover, from the perspective of the student this performance/grade exchange is
fought with what he calls task risk and task ambiguity. The concept of task risk refers to "the probability of securing a successful performance/grade exchange weighted against the consequences of failure to meet performance requirement on a particular occasion" (Doyle, 1981, p. 194). Task ambiguity "results primarily from gaps in information about performance expectations as to what kinds of answers will be required and which ones are considered correct" (p. 194).

But students are not mere passive recipients of teacher imposed tasks. When task risk or ambiguity are perceived as high by students they appear to direct their efforts to modifying the task. In fact, Doyle (1979) suggests that student strategies which are directed toward reducing task risk and ambiguity effectively transform the nature of the learning tasks. An example of such an attempt to modify task conditions is given by Davis and McKnight (In Doyle, 1979) in which junior high school students strongly resisted an attempt by teachers to modify the tasks of a mathematics course in such a way that task ambiguity was increased.

It seems that students can also actively influence the degree of risk involved in a task. Noble and Nolan (1976) found that individual students actually were able to exercise control over when they had to participate in classroom discussions, and Mehan (1974) reported that first-grade pupils, when called on to recite, used delays when answering to get other pupils, and the teacher, to respond for them. Similar strategies have also been found to exist in secondary school (MacKay, 1978). However, it is not only the
student who is part to task modifications. Teachers themselves often allow a degree of task modification in order to seek and maintain student cooperation. Doyle (1977) found that student teachers conceived lessons as units of time to be filled with educationally supportable activities and that for these interns, the main task was to gain and maintain student cooperation rather than attempt to cope with instructional effectiveness within the complex classroom. Doyle's finding with student teachers has been subsequently found to also be appropriate with physical education teachers (Tousignant, 1982) and classroom teachers (Clark & Yinger, 1979).

According to Doyle (1980), "accepting a broad range of answers, many of which are factually incorrect and praising 'wrong answers' renders answering rather than giving correct answers as the task" (p. 96). Doyle goes on to suggest that "If the criteria for correctness are loose enough, the task system is suspended" (p. 96). However, Alexander (1982) argues that loose criteria, in and of themselves, are not sufficient to suspend the task system. For Alexander, it is Tousignant's (1982) "contingency-developed task model" which best reveals the conditions under which the task system is suspended. Alexander claims that "while loose criteria often allow a performance to differ from task specifications, it is the consequences following performance which define the nature of the real task" (p. 49).

**Task routinization**

Another strategy which Doyle suggests students use in an attempt to reduce task risk and ambiguity is to attempt to standardize and
routinize classroom tasks. If students are successful in getting teachers to repeat the same learning tasks, then learning tasks may be reduced to memory tasks which typically involve a reduction in task risk. It is instructive to think of tasks as arranged on a continuum according to the degree of routinization they present (Soar & Soar, 1979). A task has become routinized when it has an established procedure. Interestingly, according to Alexander (1982), Doyle himself has recently (1981b) written of routinized tasks as "established structure" (from Soar & Soar, 1979) and his earlier use of the confusing phrase "task structure" now appears to be obsolete. Alexander (1982) argued that the earlier explanations of the phrase "task structure" lacked conceptual clarity and stated that "continued use of the term "task structure", can add nothing (but confusion) to descriptions of classroom events" (p. 39).

**Empirical Studies of Tasks in Non-Classroom Settings:**

**Two Examples from Physical Education**

Doyle's concepts of task were conceptualized (1977b, 1978, 1979 & 1981b) and empirically tested (1977a, 1981a) within the context of classrooms. Although the term classrooms is a generic one which often refers to all school instructional settings, the specific demands of the gymnasium and/or playing field which represent the physical education classroom are considered to be sufficiently unique to necessitate some caution in generalizing Doyle's concepts to those settings. Given that this research attempts to apply some concepts to student teaching within physical education, some discussion of the
two known studies which focus on tasks within physical education classes would seem to be a necessary step in revealing the potential generality of such concepts to other instructional situations.

Tousignant's study

In an extensive naturalistic study of tasks in four different secondary school physical education classes, Tousignant (1982) found that many of the earlier empirical findings from classroom studies (e.g., Doyle, 1981a & Carter, 1980) were also applicable within physical education settings. In particular Tousignant found that:

- two overlapping task systems (one instructional and one managerial) characterized all classes.
- most students accomplished the tasks for which they were formally held responsible (i.e., held accountable).
- task specification was usually incomplete because it lacked specified criteria. "It appeared that the students learned more about the actual task requirements from the teacher's reactions to their responses than from the teacher's instructions" (p. 120).
- when there was no formal accountability on student performance, the instructional task system was suspended and informal contingencies controlled the real tasks.
- tasks were contingently developed over time and, in the process, the boundaries of the real tasks were identified by students.
- gaining and maintaining student cooperation appeared to be a major teaching task and that the absence of formal accountability
for skills performance may be interpreted as a strategy for expediting such cooperation.

Alexander's study

The major purpose of Alexander's (1982) study was to describe the contingency management of tasks in a physical education class. In particular to "describe one student's behavior as he responded to the tasks set within the classes' Instructional and managerial systems" (p. 7).

Data were collected from video tapes of twenty-six lessons in a high school sophomore physical education class and, following analysis, Alexander found that:
- two overlapping tasks systems existed (namely managerial and Instructional).
- tasks in the managerial system were generally specified in more detail than those in the Instructional system.
- tasks in the Instructional system were rarely fully specified.
- real tasks were almost always congruent with stated tasks in the managerial system whereas judgements related to congruity in the Instructional system were not possible due to observational insensitivity of the video recording system.
- the real task for the pupil was to pass physical education and the stated tasks in the Instructional system bore little relationship to that real task.

Thus the major findings of Tousignant and Alexander relating to physical education settings were consistent with those found in
classroom settings and the researcher considered that the generalization of the concepts of task to the student teaching context was plausible.

The Initial Task Theory

What follows is the task theory of student teaching as it existed at the commencement of the field work for this study. In this sense it was the beginning task theory and it provided the initial working hypotheses which would be empirically tested in a naturalistic setting. It is necessary to fully explicate this beginning theory in order to provide a complete account of the refinement of the theory which occurred subsequently. A fundamental working procedure used in articulating the theory was to draw diagrams of the relationships which were thought to exist between concepts. A similar procedure was used by Smith and Geoffrey (1968) in their analysis toward a general theory of teaching. Snow (1973) also claimed that such modeling provides a versatile tool for theory construction and cited the work of Blalock (1969) who effectively used schematic representations to portray various kinds of causal relationships among variables.

As a causal process form of theory (Reynolds, 1971) this theory contains a number (in this case five) of existence statements that describe those situations in which one or more causal processes are expected to occur, and a set of causal statements with either deterministic or probabilistic relations. These causal statements are termed "working hypotheses" in this study (see Chapter VI for an
explanation of the significance of this term). This causal process form of theory allows for hypothetical or unmeasurable concepts and it allows the theorist "to examine all of the consequences of his formulation, including the unintended consequences" (Reynolds, 1971, p. 106). According to Reynolds this seems to be the way that most theories in social science related to individual or social phenomenon are developed.

Although Doyle has not organized his concepts of task into a network of relations, so as to constitute an identifiable configuration or pattern, it is possible to consider his work as a form of theorizing in the sense of Snow's (1973) "conceptual theories and constructs". By making such a claim, it is then possible to consider the task theory of student teaching as a form of reintroduced theory in which certain elements of the validated theory were selected and applied to a new field (MacClia, 1965). In this case Doyle's concepts are applied to the context of student teaching.

Definitions and constructs

For the purposes of convention all definitions and constructs which are used in the theory are outlined in the definition of terms section of Chapter I.

Assumptions

1. The concepts of task developed by Doyle to explain classroom instruction can be appropriately used in the context of student teaching.
2. Reduction of the discrepancy between real and stated tasks is fundamental to an intern's success in student teaching.

The beginning existence statement

The congruence between real and stated tasks is a partial function of task risk, task ambiguity, formal accountability and the classroom ecology.

![Diagram](figures/figure_5.png)

**Figure 5: Factors Influencing Task Congruence**
Statement 1: The degree of task ambiguity will affect the probability of obtaining task congruence.

Figure 6: Relationship of Task Ambiguity to Task Congruence

Hypothesis 1.1: If a complete stated task exists, then there will be less task ambiguity.
Hypothesis 1.2: If an incomplete stated task exists, then there will be high task ambiguity.

Hypothesis 1.3: If high task ambiguity exists, then the intern will attempt to seek more information in order to reduce ambiguity.

Hypothesis 1.4: If high task ambiguity then decreased probability of task congruence.

Hypothesis 1.5: If low task ambiguity then increased probability of task congruence.
Statement 2: The probability of task congruence is influenced by the presence of formal accountability.

Hypothesis 2.1: If formal accountability exists, then appropriate behavior will be reinforced and inappropriate behavior reduced.

Hypothesis 2.2: If appropriate behavior is reinforced, then the probability of task congruence is increased.
Hypothesis 2.3: If inappropriate behavior is reduced, then the probability of task congruence is increased.

Hypothesis 2.4: If no formal accountability exists, then task performance will be contingency developed.

Hypothesis 2.5: If task performance is contingency developed, then decreased probability of task congruence.

Statement 3: Task risk is influenced by formal accountability and task difficulty.
Hypothesis 3.1: If there is not formal accountability, then there are no formal consequences for failure.

Hypothesis 3.2: If task difficulty increases, then the probability of gaining an appropriate grade decreases.
Hypothesis 3.3: If the formal consequences of failure are high and the probability of gaining an appropriate grade is low, then task risk will be high.

Hypothesis 3.4: If the formal consequences of failure are low and the probability of gaining an appropriate grade is high, then task risk will be low.

Statement 4: Individual student teachers differ in their perception of task risk. Task congruence is affected by an individual's perception of task risk.
Figure 9: Relationship of Task Risk to Task Congruence

Hypothesis 4.1: If task risk is perceived to be high, then the intern will either avoid the task or will attempt to negotiate the demand of the task downward.
Hypothesis 4.2: If task risk is perceived to be low, then the intern will either avoid the task or will attempt to negotiate the demands of the task upward.

Hypothesis 4.3: If task negotiation downward is unsuccessful, then the intern will either avoid the task or decrease task engagement.

Hypothesis 4.4: If task negotiation upward is unsuccessful, then the intern will either avoid the task or decrease task engagement.
Hypothesis 4.5: If task risk is optimal, then increased task engagement will occur.

![Diagram: Task risk (optimal) arrow to Increased task engagement]

Hypothesis 4.6: If decreased task engagement, then decreased probability of task congruence.

![Diagram: Decreased task engagement arrow to Decreased probability of task congruence]

Hypothesis 4.7: If increased task engagement, then increased probability of task congruence.

![Diagram: Increased task engagement arrow to Increased probability of task congruence]

Statement 5: The classroom ecology will influence the degree of task congruence which an intern can achieve.
Hypothesis 5.1: If the stated task is compatible with the classroom ecology, then the probability of task congruence will be increased.
Hypothesis 5.2: If the stated task is incompatible with the classroom ecology, then the probability of task congruence will be decreased.

Placing all the above schematic representations into context with one another produced the following task model of student teaching. (See Figure 11 next page).
FIGURE 11: INITIAL TASK MODEL OF STUDENT TEACHING
A Major Modification to the Initial Task Theory

Within the first two weeks of the field work, the process of attempting to match collected data with the hypotheses was commenced. During this initial data collection phase it was realized that although the substance of the beginning existence statements appeared sound, they were, in a sense, overly complex and perhaps some of them were redundant. During the two weeks which followed this realization an attempt was made to re-work the basic concepts which the existence statements articulated into a more parsimonious form. Parsimony seemed important not only for clarity but also for purposes of plausible testing of working hypotheses (Marx, 1963 & Snow, 1973).

Following a good deal of discussion with Alexander (1983), it seemed that a contingency task model (which he termed a contingency management of tasks model, see figure 12), as originally discussed by Tousignant (1982), might provide a suitable conceptual structure for the modification of the task theory to a more parsimonious form.
Antecedents Behavior Consequences

Teacher Congruity Analysis

Task Specification Task Performance

Arranged Consequence

Natural Consequence

Relationships may hold
Relationships do hold

Figure 12: The Contingency Management of Tasks Model
(From Alexander, 1982)

In essence, the contingency task model is based on the contingencies of reinforcement by Skinner (1969). It was thought that the operant underpinnings would allow for the developing theory to be grounded in such a way that explanation of phenomenon would be readily facilitated. Thus, as Dussault's (1970) theory of
supervision in student teaching was based on Carl Rogers' theory of therapy and personality change, the evolving task theory was to have as its base, Doyle's concepts of task and Skinners' theory of contingencies of reinforcement.

The basic principle of an interpretation of findings based on the contingencies of reinforcement is that behaviors are shaped and maintained by their consequences. Smith and Geoffrey (1968) tried to find in their data the antecedents and consequences of behaviors within the classroom setting, and this same focus was thought to have potential for interpreting the findings of this study. In contrast, Doyle (1979), has attempted to interpret the findings of his empirical investigation into tasks, within the foundations of cognitive psychology (specifically information processing). Doyle (1979), however, seems to offer support for a more behavioral interpretation when he stated:

"A second feature of an ecological viewpoint is, appropriately, that there is a direct focus on environment-behavior relationships. The model postulates that environments establish limits on the range of behavioral options and that observed behavior is in large measure a response to the demand characteristics of a given setting. In an ecological analysis of teaching, therefore, an attempt is made to account for the actions of teachers and students in terms of the demands of classroom environments" (p. 189).

Tousignant (1982) used a behavioral perspective to interpret her findings of tasks in physical education and claimed that "what students learn in a teaching situation is a function of the demands that are made on them, how they respond to those demands, and what are the consequences attached to their responses" (p. 5). Substituting the term student teacher for student, Tousignant's
statement would seem to have utility within the student teaching context.

To return to the major modifications to the Initial task theory of student teaching, it is important to understand how the Initial existence statements became subsumed in the more parsimonious set of "new" existence statements which were articulated by the fourth week of field work. What follows is an outline of the new statements, schematic representation of the proposed associations between concepts, the new working hypotheses, an explanation of how the Initial existence statements are accounted for in the modified theory, and finally the revised task model of student teaching.

**Statement 1:** The congruence between task performance and task specification is a partial function of task ambiguity, task difficulty, and task risk.

![Figure 13: Relationship between task congruence and task ambiguity, task difficulty and task risk](image-url)
Hypothesis 1.1: If incomplete task specification, then task ambiguity.

Excessive
- task ambiguity

Seeks more
- Information

Hypothesis 1.2: If task ambiguity is excessive, then the intern will seek more information.

Task
- ambiguity

Risk

Hypothesis 1.3: If task ambiguity, then task risk.

Task
- ambiguity

Risk

Hypothesis 1.4: If task difficulty, then task risk.

Task
- ambiguity

Risk

Hypothesis 1.5: If task risk is excessive, then the intern will attempt to negotiate the task demands downward.

Excessive
- task risk

Attempt to
- negotiate downward
Hypothesis 1.6: If task risk is not excessive, then task performance.

Hypothesis 1.7: If negotiation downward is unsuccessful, then the probability of task congruence is reduced.

Statement 2: The congruence between task performance and task specification is a partial function of supervisor monitoring and the application of contrived consequences.

Figure 14: Relationship between supervisor monitoring, contrived consequences and task congruence
Hypothesis 2.1: If supervisor monitoring, then increased probability of task congruence.

Hypothesis 2.2: If no supervisor monitoring, then decreased probability of task congruence.

Hypothesis 2.3: If contrived consequences are applied, then increased probability of task congruence.

Hypothesis 2.4: If contrived consequences are not applied, then decreased probability of task congruence.
Statement 3: The congruence between task performance and task specification is a partial function of natural consequences.

Hypothesis 3.1: When natural consequences are more powerful than contrived consequences:

If task is contingency developed, then the probability of task congruence is decreased.
Summary of theory modification

The concepts associated with task risk, which were articulated in initial existence statements 3 and 4 have been modified as part of the new existence statement number 1. Similarly task ambiguity (initial existence statement number 1), and task difficulty (initial statement number 3), have been modified and included also in the new statement number 1. Accountability (initial statements 2 and 3), although not explicitly mentioned in the new statements, can be explained within the new statements number 2 and 3, which relate specifically to monitoring behavior and the application of consequences, either contrived or natural. Classroom ecology, which was the focus of initial statement number 5, can be interpreted within the new statements by consideration of the nature of the consequences and the development of contingency developed tasks (specifically in new statement number 3).

Thus the original concepts have been included in a new set of statements which generated a new set of working hypotheses. Testing these hypotheses provided for a more efficient and useful explanation of phenomena when interpreted from the perspective of the contingencies of reinforcement.

The revised version of the task model of student teaching is shown in Figure 16 on the following page.
Figure 16: Revised Task Model of Student Teaching
CHAPTER V

REVIEW OF METHODOLOGY

Within this chapter, an attempt is made to locate this research study within the major educational research paradigms. In particular, the nature of paradigms will be discussed and a defense given for the paradigmatic stance of this investigation.

Methodological Underpinnings

There were two major influences on the choice of methodology to be used in this study and both related to the need to use a methodology which was appropriate for the research questions being asked.

At the most general level, choice of methodology was influenced by criticisms of the methods used in the majority of research into student teaching. As outlined in Chapter II, critics such as Zeichner (1978), Locke (1977), Pospieszynski (1977) and Tabachnick et al (1978), have claimed that much of the research to date has been impotent because it has employed methodologies which have not allowed important fundamental questions to be addressed. Locke (1977) captured the spirit of the criticism when he claimed that "...educational researchers have spent half a century trying to fit some round methodological pegs into square questions..." (p. 14) and as a result have failed to illuminate the complex and dynamic
realities of student teaching. According to Zeichner (1978), what is needed is research "which probes more deeply into the subtle processes of student teaching and which can increase our understanding of the event itself" (p. 55), and it is naturalistic methods which are best suited for such purposes.

At a more specific level, given the focus of his research on tasks in student teaching, the arguments presented by Doyle (e.g., 1977) were a significant influence on choosing the methodology. Doyle (e.g., 1977) has been critical of much of the research on teaching in a similar way to which Zeichner (1978) and others have criticized research on student teaching. According to Doyle and Ponder (1975), treating teacher behavior in isolation from the environment in which it occurs has hampered the progress toward the construction of adequate models for explaining classroom events and processes. In particular, "Descriptions of teacher behavior too frequently fail to provide much information about the context in which the behavior occurs" (p. 185). It is the ecological approach which Doyle (1979) considers to be most appropriate for conceptualizing linkages between ecological variables and teacher behavior. The ecological approach advocated by Doyle, and others such as Copeland (1979) and Yinger (1978), is claimed to acknowledge and emphasize the subtle, yet complex independencies between behavior and environment. In fact, the basic premise of the ecological approach is that classroom environmental demands both shape observed behavior and establish limits on what behaviors are possible within that given classroom.
Doyle (1977) argued that a model of classroom ecology would seem to raise fundamental questions about the "personallistic" interpretation of the causes of teacher behavior." and that

"...the teaching field is dominated by the view that observed teacher behavior is primarily the result of the teacher's own capability and/or motivation. The teacher education task has therefore been traditionally defined as one of changing teachers. Such a view ignores, however, the complex often subtle interdependencies between behavior and environment." (p. 17)

In addition, Doyle (1979) identified five characteristics of classrooms which he claimed reflected their complex nature. The characteristics included:

- Multidimensionality; which referred to the constant interaction between human, material and temporal resources.
- Simultaneity; where many classroom events occur at one time.
- Immediacy; which referred to the need for the teacher to act quickly in response to certain events.
- Unpredictability; in that many classroom events cannot be anticipated.
- History; where certain patterns of interaction and behavior had developed over time.

Using a classroom as a research setting therefore necessitates the use of a methodology which is capable of capturing such complexity and, according to Doyle, the ecological approach possesses such capability.

Essentially, there are three basic dimensions to the ecological approach to research advocated by Doyle. First, it is vigorously naturalistic. By naturalistic, Doyle meant that it occurs in natural
settings (namely classrooms and schools) and that it has potential to "capture" variables which might not have been thought of prior to the inquiry. In this respect the approach overcomes one of the problems which is a limitation to standard category systems for observation such as interaction analysis. Doyle cited Kounin's (1970) finding of the unexpected phenomenon of "withitness" as an example of the potential of naturalistic inquiry.

Second, there is a direct focus on the relationships between environment and behavior. An attempt is made to account for pupil and teacher behavior in terms of the demands of the environment. In other words, the classroom environment is not considered to be a neutral setting in which teachers and pupils interact.

Third, the organizing question in the ecological approach is fundamentally diagnostic - namely, "Why do pupils and teachers behave as they do in classrooms?" Doyle claims that the focus of this question contrasts the conventional orientation in teaching research which is "How can teachers be changed to be more effective?" Also, "the focus on intrinsic properties of classrooms can also contribute a needed conceptual base for research on teaching and teacher education." (Doyle, 1979, p. 191).

This ecological approach has been the focus of all Doyle's work on tasks and also of the research into the nature of tasks by Carter (1980) and Tousignant (1982). In terms of this study, the first and second features of the ecological approach are most pertinent. What follows is an explanation of the characteristics of naturalistic inquiry and of the assumptions such methodology implicitly supports.
However, to make sense of these characteristics and assumptions, it is first necessary to briefly discuss the term paradigm which will have meaning in the discussions to follow.

**Research Paradigms**

A paradigm is essentially a mode of perceiving the world and involves a set of intertwined theoretical, epistemological, and methodological beliefs. That is, it is "...a loose collection of logically held-together assumptions, concepts or propositions that orient thinking and research" (Bogdan & Biklen, 1982, p. 30). Paradigms designate, usually implicitly, what problems and research questions are worthwhile and functions to direct how answers to those questions shall be found. A paradigm, "by specifying legitimate problems, methods, and solutions, operates in a legislative fashion to determine the kinds of questions are asked and the kinds of data are considered relevant" (Doyle & Ponder, 1975, p. 4).

The fact that much of what constitutes a research paradigm is implicit, rather than explicitly detailed, led Rist (1977), among others, to suggest that it is important to "ferret out" the tacit, often unquestioned, assumptions which constitute much of the criteria by which advocates a paradigm judge the worth of a piece of research.

In educational research it can be argued that most research efforts embrace one or other of two dominant research paradigms (see for example Rist, 1977; Smith, 1983; Guba, 1981). Zelchner (1978) has called them the "psychometric paradigm" and the
"social-anthropological paradigm"; Guba and Lincoln (1982) called them the "scientific paradigms" and the "naturalistic paradigms"; and Rist (1977) and Bogdan and Biklen (1982) have used the labels of "quantitative and qualitative paradigms". Although, for the purposes of this dissertation, the choice of label will be scientific and naturalistic, the choice of term is of minor significance. What is significant is that "the research orientations are themselves grounded in a perspective beyond simple questions of methodological procedure" (Rist, 1977, p. 43). In essence they encompass and represent a great deal more than simply data gathering techniques. What follows is an explanation of some of the fundamental differences between the two dominant paradigms in educational research based on the writings of Guba (1981), Bogdan and Biklen (1982), Rist (1977) and Smith (1983). It is understood that there are some exceptions to the following generalizations, however, it is considered beyond the scope of this dissertation to discuss such exceptions.

**Intellectual and philosophical roots**

Whereas the scientific paradigm represents a positivistic perspective and traces its roots back to Mill, Durkheim, Compte, and originally the writings of Newton and Locke, the naturalistic paradigm displays a phenomenological perspective rooted in the Idealism tradition of Kant, Dilthey, Rickert, and Weber.

**The nature of reality**

For the scientific paradigm there is a single reality which can be pursued, and such reality may be reduced or fragmented in smaller
units for the purposes of analysis. Concentration on parts of the whole is considered to be legitimate, indeed essential, practice and does not alter the nature of the reality. Within the naturalistic paradigm reality is not considered to be a single entity, but in fact there are multiple realities and furthermore, they are interrelated to the extent that it is not possible to isolate and study one variable without influencing the nature of all others. Moreover, the naturalistic paradigm assumes that reality is socially constructed and that the meaning which humans give to their behavior is of essential importance. An attempt is made to present an emic perspective (the view of the participant) rather than an etic perspective (the view of an outsider) which is the case with the scientific paradigm.

The nature of "truth statements"

A basic focus of the scientific paradigm is the search for generalizations which are context free. It is assumed that such generalizations are possible and that they are developed through nomothetic knowledge which focusses on the similarities between the objects of Inquiry. The assumption of the naturalistic paradigm, on the other hand, is that context-free generalizations are not possible and that the appropriate focus should be on idiographic knowledge which emphasises differences as at least as important as similarities.

Influence of the researcher

Within the scientific paradigm it is assumed that the inquirer can assume and maintain an independent stance with respect to the
object of study. The naturalistic paradigm on the other hand assumes that independence between researcher and researched is not possible and hence accepts and expects each to influence the other. For the researcher in the scientific paradigm there is an attempt to avoid direct contact with the phenomenon studied in order to improve objectivity. Typically a research instrument provides the isolation. For the naturalistic inquirer no such distancing is possible, or indeed sought, since the researcher is the instrument.

**Appropriate data**

Typically, the scientific paradigm is characterized by its predisposition to quantitative data, whereas qualitative data is the chosen form for the naturalistic paradigm. Naturalistic data are typically words rather than numbers and are most often written in the language of the subjects. Although the distinction between the two paradigms on the basis of type of data is common, there are those (e.g., Smith, 1978 and Guba, 1981) who consider such a distinction to be unnecessary.

**Source of theory**

Theory of the hypothetico-deductive type is typically preferred within the scientific paradigm. Such theory is a priori, in that it exists before the investigation begins, and it requires that hypotheses to be tested and stated in advance. Within the naturalistic paradigm the preference is for what Glaser and Strauss (1967) calls "grounded theory". Such theory emerges from analysis of the data and therefore is a product of inductive processes rather than deduction. As Rist (1977) pointed out, typically in qualitative
research "one begins not with models, hypotheses, or theorems, but rather with the understandings of frequently minute episodes or interactions that are examined for broader patterns or processes" (p. 44).

Rigor and reality

In assessing the quality of an inquiry, the single most important criteria within the scientific paradigm is rigor or internal validity. Proponents of naturalistic inquiry claim that relevance (in the sense of the applicability to the "real world") is most important. It will be argued later in this chapter that while these emphases are useful characteristics, issues related to rigor are not the preserve of the scientific paradigm and should also be addressed in naturalistic inquiry.

Research design

The scientific paradigm typically requires the specification of the steps in the research design before the investigation begins and an adherence to those steps throughout the study. Moreover, only hypotheses which have been specified before hand are considered to be appropriate and as such new insights which may arise during the study must await a further investigation before they can be considered. The naturalistic paradigm, on the other hand, considers an emergent design to be essential given the unfolding nature of understanding that occurs during a study. Typically, the researcher does not begin with hypotheses but develops tentative "working hypotheses" (Geer, 1969) which are influenced and modified by the emergent data.
The research setting

Given the importance of relevance and the attempt to portray an emic perspective, the naturalistic inquirer must use a naturalistic setting. The real world of the classroom, gymnasium, school, playground or canteen are the settings in which the naturalistic educational researcher will seek data. For the researcher in the scientific paradigm, however, it is rigor which is of fundamental importance and settings in which maximum control over variables can be maintained (e.g., a laboratory) are preferred.

Interestingly, Wilson (1977) in describing the use of ethnographic techniques in educational research made a distinction between what he called two sets of hypotheses about human behavior: the naturalistic-ecological hypothesis; and the qualitative-phenomenological hypothesis. Together these hypotheses are fundamental to a rationale for participant observation research. However, Wilson claimed that if one adopts a naturalistic-ecological perspective, the only demand is that behavior be studied in the natural setting and therefore it would be possible to preserve the rest of what he claimed to be standard technique for educational research, namely "deriving explicit a priori hypotheses, defining operational categories of observation, developing objective data collection methods and conducting appropriate statistical analyses" (p. 249). Clearly, Wilson's use of the term naturalistic is considerably more limited than that of Guba (1981) or Doyle (1979).
Within the context of the present study it is Guba's conceptualization of naturalistic which will be adopted.

**Mixed Paradigms? A Justification**

Although "the adherence to one paradigm as opposed to another predisposes one to view the world and events within it in profoundly different ways" (Rist, 1977, p. 43), there does appear to be some legitimate room to manoeuvre in terms of adhering to some, but not all of the characteristics which typically are associated with a particular paradigm. It was Mills (1959) who warned against the tendency of some researchers becoming so enamoured with one method to the exclusion of all others that the method becomes an end in itself. As Homans (1949) suggested, issues of methodology are issues of strategy, not of morals.

The issue of the type of data which characterizes each paradigm is a case in point. Glaser and Strauss (1967), who articulated the concept of grounded theory and the constant comparative method of analyzing qualitative data, claimed that

"there is no fundamental clash between the purposes and capacities of qualitative and quantitative methods or data. What clash there is concerns the primary of emphasis or verification or generation of theory - to which heated discussions on qualitative versus quantitative data have been linked historically. We believe that each form of data is useful for both verifications and generation of theory, whatever the primary of emphasis" (p. 17).

Similarly, Smith (1978) was of the opinion that "many of the arguments about qualitative and quantitative data are pseudo issues" (p. 34). The point is, that just because an inquiry is naturalistic,
that does not preclude the use of quantitative data, and vice versa for a scientific inquiry.

Another example of what could be considered to be mixed paradigms relates to the notion of theory. In a frank account of his confusions with respect to his own use of naturalistic inquiry, Louis Smith (1978) admitted that in the research for *Complexities of an urban classroom* (Smith & Geoffrey, 1968), although using participant observation, which is a form of naturalistic inquiry, their conception of theory was clearly that of the logical positivistic tradition.

Smith (1978) argues that the process used in *Complexities of an urban classroom*, namely the development of "glossaries of concepts with theoretical and operational definitions and pictorial models of miniature and middle-range theories" (p. 355) led to a conception of explanation which was consistent with that of Hempel's (1965) covering law model. "The conception legitimated an emphasis on theory generation in the case study, with later verification/falsification in more classical experimental and quasi-experimental designs" (p. 355). The model shown as figure 1 on page ??? shows this sequence.

For Smith (1978), his conception of theory led to a position that education principles are merely one piece of social science and that social science is part of a lawful determined universe. This position, Smith claimed, was strongly influenced by the traditional empiricism rationale of Homans (1949). However, Smith subsequently found that Bruyn (1963), who made "a case for participant observation
as the method of sociology, based on the central criterion that it respects the nature of the subject matter, the human condition" (Smith, 1978, p. 356) was arguing from a position in marked contrast to that of the "traditional empiricist". Smith candidly admitted that "I found myself doing what I thought was participant observation, yet doing it from a rationale which he saw as a polar opposite" (p. 356). Smith's realization was that "Homans and Bruyn, the major exponents of case studies, qualitative observation, and generation of grounded theory, were operating from highly divergent metatheoretical positions" (p. 356). It seems that for Smith the dilemma remains.

The present study shares something of the same dilemma, for although participant observation was used as the research methodology, the task theory, although partly inductive in development, is clearly articulated in a form which is characteristic of the logico-deductive type (Zetterberg, 1963). Perhaps, however, the dilemma is of little real significance for Doyle and Ponder (1975), among others, have considered the Smith and Geoffrey (1968) study to be an exemplar of the naturalistic method.

Another feature of the two paradigms in educational research which stimulates some debate is the notion of focus of the Inquiry. As Guba and Lincoln (1982) have argued, the scientific paradigm is essentially reductionistic in that typically the inquirer has a relatively small focus. For example, "the scientific inquirer begins with preformulated questions or hypotheses and seeks only that information that will answer those questions or test those
hypotheses" (p. 70). Naturalistic inquiry, on the other hand, is expansionist in a nature. Emphasis is on exploration that will lead to description and understanding of phenomena in ways that reflect their complexity.

Williams and Raush (1969), cited in Guba and Lincoln (1982), provided a definition of naturalistic inquiry which is based on the extent to which the researcher places constraints upon two dimensions: antecedent conditions and outputs. Guba provided an illustration of the Williams and Raush's definition of the scientific and naturalistic domains of inquiry. Within this conceptualization, choosing to focus on certain variables (at the exclusion of others) is a form of constraint. The following figure represents Guba's adaptation of the Williams and Raush illustration of the relationship of the two domains of inquiry. The shaded area in the middle represents the position which could be accorded to the present study.

Figure 17: Degree of Imposition of Constraints on Antecedent Variables (After Guba, 1982)
Within this conceptualization, choosing a particular focus at the outset (e.g., focus on tasks) would necessarily increase the constraints on possible antecedent variables. Similarly, choosing among all possible factors to which the inquirer might attend once the research is underway represents a degree of imposition of constraints on outputs.

Guba and Lincoln (1982) suggest that this concept of the domain of inquiry reveals that pure forms of inquiry, in the sense of entirely naturalistic or entirely scientific, are rare and that "most inquiries combine these approaches in one way or another" (p. 81). Such is the case with the present study and also with much of the work of Smith (1978) who, as indicated earlier, has continually grappled with what he described as apparent epistemological conflicts within the one piece of inquiry.

To admit that this study does not represent a pure form of naturalistic inquiry is not considered to be a weakness. As Rist (1977) points out, "...there is not omnibus strategy for our study of causality. Rather, what appears more realistic is to assume that different methodological approaches are appropriate for different levels of analysis and for different levels of abstraction." (p. 47). Within this study, the a priori theory of tasks in student teaching is, in a very real sense, grounded in earlier inquiry. First, it was grounded in the mini-ethnographic study of supervision of student teaching conducted by this researcher twelve months earlier. And second, it was grounded in the empirical studies of Doyle (1981), Carter (1980), Tonsignant (1982) and Alexander (1982). The following
model represents the current study as an adapted form of the Smith and Geoffrey (1968) model shown on page 64.

![Diagram of the Inquiry Sequence of the Present Study](image)

**Figure 18: The Inquiry Sequence of the Present Study**

A significant feature of this model (Figure 18) is that the mode of verificational research, modified analytic induction, is a form of analysis which operates on qualitative data. In the Smith and Geoffrey model (Figure 1) verificational research was limited to three forms typically associated with scientific research, namely, laboratory experiment classroom experiment, or correlational analysis. Modified analytic induction, as will be discussed later, allows for revision of theory during the analysis process and hence the result of verificational research is a revised theory. This
contrasts the Smith and Geoffrey notion of theory revision following verificational research.

A Case Study

This study can perhaps best be characterized as a case study in that it has as its focus the student teaching experience of one student teacher. Essentially the phrase "case study" has many manifestations and the nature of the "case" may have different meanings in law, medicine, sociology, or education. It may attempt to exemplify, to explore relationships, to describe or portray or to suggest a basis for theory. However, even though it has various forms, essentially "case study" is the examination of an instance in action" (Walker, 1980, p. 33).

For this study, the "case" was defined as the experience of one intern during a term of student teaching. In particular, specific focus was directed at the tasks which the intern was expected to accomplish and those which were actually accomplished.

Within educational research, advocates of case study (e.g., Kemmis, 1980; Stake, 1978; and Shaw, 1978) consider it to be synonymous with naturalistic inquiry. It entails therefore, consideration of a good deal more than sample size. The use of case study for theory building has been discussed by Stake (1978) as follows.

"Although case studies have been used by anthropologists, psychoanalysis, and many others as a method of exploration preliminary to theory development, the characteristics of the method are usually more suited to expansionist than reductionist pursuits. Theory building is the search for essences, pervasive and determining ingredients and the
making of laws. The case study, however, proliferates rather than narrows. One is left with more to pay attention to rather than less. The case study attends to the idiosyncratic more than to the pervasive. The fact that it has been useful in theory building does not mean that that is its best use" (p. 7).

Such a position with respect to theory development is somewhat at variance to the Glaser and Strauss (1967) argument for the need to develop grounded theory from data collected from participant observation type investigation. Perhaps, however, it is more a difference in degree of emphasis than in fundamental assumptions. Certainly Stake was not suggesting that case study was not useful for theory development.

The choice of the case study for this study was essentially based upon two issues: the need for completeness of data, and the need for descriptive data.

a. Completeness of data

In most research, there are practical limitations to the amount of data that can be collected within the duration of the study. A decision usually must be made with respect to the question "how much data is necessary in order to answer the research questions?" In the present study it was considered essential to collect data on all instances of task setting and task performance which involved the Intern. Given that the researcher could only be in one place at one time, it would not have been possible to observe more than one intern during the course of the term. In other words, observation of more than one intern would have necessarily resulted in a trade-off with
respect to the amount of data collected for each intern. In order to adequately answer the research questions for this study such a trade-off was considered inappropriate.

b. Descriptive data

Given the nature of the concepts of task developed by Doyle, data had to be of descriptive form in order to adequately record sufficient detail to interpret the tasks. Descriptive qualitative data would enable complete records to be made of all tasks—stated, tacit, and actual. Such data would also be necessary to record the perspectives of the participants in the study, namely—the intern, the cooperating teachers, and the university supervisors. It was recognized that a particular event might have different meanings for different participants and that such differences would be most readily captured by qualitative data.

Chapter Summary

In this chapter the choice of research methodology was articulated. A comparison of some of the major differences between the two dominant paradigms in educational research was presented and the present study located with respect to these paradigms. Although this study was essentially naturalistic, the development of a theory which was of the logico-deductive type appeared to breach certain tenets of the naturalistic paradigm. A justification for the mixed paradigms stance of this study is outlined in this chapter. Also, reasons for the selections of a single case study were presented.
CHAPTER VI

METHODS AND PROCEDURES

The Research Settings

Since this research was a case study of one intern, the research settings were those in which the intern was required to teach. Students wishing to graduate from The Ohio State University with certification in both elementary and secondary physical education must complete teaching practice in both elementary and secondary school settings. To accommodate this requirement within the one term of student teaching, interns are required to teach for half a day, each day, in each of the two settings. Typically, an intern will teach in the elementary setting in the morning and the secondary setting in the afternoon.

Mark (a pseudonym), the student teacher who was the subject of this study, taught at Highview Elementary School (a pseudonym) in the mornings and Morningstar Middle School (a pseudonym) in the afternoons. Both schools were located within the same school district. The school district was located in an upper middle class suburban residential area and had a reputation as a very good school system. Indeed, the reputation of the school district was said to be the reason why many families had moved to the area in the time since the city public school system was court ordered to desegregate. Of
course, there are other opinions as to the reason for the "white flight" from the city school system. An identifiable characteristic of the two schools, and others in the district, was the small number of black students. At Highview, for example, there was only one black student.

Gaining entry to both school settings was a simple procedural matter. First, the study was discussed with the intern, the university supervisor, and the two cooperating teachers. In each instance the exact focus of the study was not revealed fully and the research described in general terms as an ethnography of the student teaching process. It was, however, explained that the researcher also intended to test a theory of student teaching, the details of which would need to be withheld in order to prevent any conscious or unconscious modification of behavior on their part. There was unanimous acceptance of the researcher's request to be a "fly on the wall" for the duration of the term. Second, a letter was sent to the principals of Highview and Morningstar seeking permission to enter their schools for the study. It was explained to each principal that the teachers and the intern were accepting of the researcher's request and that the researcher's presence would in no sense be demanding or intrusive. Third, a meeting with each principal was arranged in which the details of the study were elaborated. Both principals readily agreed to the researcher's request. Fourth, details of the research project were submitted, through The Ohio State University, to the school district officials in order that each school could receive compensation (in the form of university fee
waivers) for their involvement in the research project.

The proposed investigation was exempt from review by The Ohio State University's Human Subject Review Committee.

Highview Elementary School

Highview was opened twelve years ago and, at the time of this study, had an enrollment of approximately 450 pupils. Built with an open classroom (open in the sense of large spaces divided into areas rather than rooms) and team teaching concept, the school had a very generous staffing establishment. The staff included the principal, 17 class teachers for grades kindergarten to grade six, specialist teachers in Art, Reading, Music, Speech and Physical Education. There was also a librarian, three teacher's aides, two Individualistic Instruction teachers (for the gifted program), a learning disability specialist, 85 parent volunteers and a part-time nurse and psychologist.

In terms of facilities, the school represented the economic community in which it was located. It had the best of everything. Of particular relevance to this study were the physical education facilities. The school had abundant grassed playing areas and also a large sealed playground on which was located an extensive set of climbing and adventure equipment. Although the gymnasium also served at the school canteen during lunch times, and as the school hall on special occasions, it was visibly used as a gymnasium. Various forms of climbing equipment were attached to the walls and ceiling and numerous gymnastics mats were stacked along the side walls. A
particular unique feature of the gymnasium was the rock climbing attachments on the walls. Two walls were painted to simulate mountains and a number of wooden blocks were mounted on the walls in strategic places to serve as hand and foot holds. Safety wires were attached to the ceiling, and above a small ledge at the top of one "mountain" were the names of all students who had successfully climbed the "mountain".

The gymnasium floor was a maze of colored lines which were used for various games and a time out box (for classroom management purposes) was painted on the floor just outside the door to the physical education office. Next to the office was one of three physical education storage areas and it contained the most complete and varied range of physical education and games equipment imaginable. Much of the equipment had been made by the physical education teacher himself and represented a potential for variety of activity which would be unsurpassed in almost any elementary (or secondary) school.

Morningstar Middle School

Morningstar had been in operation for sixteen years and contained approximately 650 pupils in its two grade levels (grades 7 and 8). Within the school district there was a special school just for 9th grade before senior high. There were 41 teachers at Morningstar, including two physical education teachers. In its early years the school attracted a good deal of attention as a model for, the then new, middle school concept. When Title IX became law, the physical
education program was one of the first to change to coeducation and as such it was the focus for considerable attention.

Time spent at each setting

Over the eleven weeks of contact with the Intern, the researcher spent approximately 100 hours in observation and interview. Generally all morning (about 2 hours) was spent at Highview each day and on Wednesday and Friday part of the afternoon was spent at Morningstar. Given unpredictable interruptions to the programs in both schools (e.g., shortened periods, inservice days, etc.), a majority of field time was spent at Highview, the elementary setting.

The Student Teacher

Mark was 24 years old and was born in a small town in Illinois. He attended the local school in that town until his freshman year in high school at which time he moved, independently of his family, to northern Minnesota so he could play a higher standard of ice hockey. Following graduation from high school, Mark spent four months in Colorado at the U. S. Airforce Preparatory School but found the experience not to his liking and returned to Minnesota to play hockey. He was later recruited by The Ohio State University to play hockey and had played for the university for each of his four years as a student. Mark planned to take five years to complete the four year physical education degree because he claimed that hockey took up so much of his time from October to May that he had to take a reduced academic load in order to maintain good grades.

While at Ohio State, Mark had had four field experiences in
different settings. He taught mathematics in a third grade class, and physical education in an inner city high school, a suburban middle school and a suburban elementary school. Since his first year Freshman Early Experience Program at Morningstar Middle School, he had returned to that school on a regular basis and coached track and field there every spring term. Mark had a good working relationship with Mr. Blackwell (the cooperating teacher) even before the student teaching experience began.

In terms of ability, Mark was an exceptional student. Not only was he a most able performer of almost all physical skills, his knowledge of his subject matter was also sound. As a mature student with a likeable personality and an enthusiasm for teaching, Mark received outstanding recommendations for his performance in student teaching.

The University Supervisor

Dr. Austin (a pseudonym) was a 32 year old male in his first year as an assistant professor at The Ohio State University. In a very real sense, Dr. Austin must be classed as atypical of most university supervisors in physical education since he holds a doctorate specializing in physical education teacher education. Dr. Austin was committed to a form of supervision which is based upon the systematic recording of pupil and teacher behavior in class. As such, his focus was on the development of teaching skills through the provision of frequent feedback to the intern in the form of systematic objective type data. Such was his commitment to frequent feedback that he visited each of his seven student teachers 14 times during the 10
week term. When asked what was the greatest constraint to effective supervision, Dr. Austin answered, "The major constraint is lack of time in the schools."

In selecting Dr. Austin as a potential participant in this study, only three criteria were important. First, he had to be naive to the specific focus of the study. That is to say, he needed to be unaware that the research was to be concerned mainly with the tasks he expected the Intern to accomplish. Second, he should be a regular faculty member rather than a fellow graduate student (some graduate students act as university supervisors for student teaching). And third, he must agree to allow the researcher complete access to all settings relevant to student teaching and all documents pertaining thereto. All three criteria were satisfied and Dr. Austin readily agreed to be part of the study.

The Cooperating Teachers

Since the student teaching program for physical education students at The Ohio State University required the Intern to teach in two settings each day (the elementary school in the morning and the middle school in the afternoon), the Intern had cooperating teachers in both settings.

At Morningstar Middle School, because there were two Interns (Mark, and a female student), and because they were required to team teach for many activities, there were two cooperating teachers who oversaw the experience of the Interns. Specifically, however, the male physical education teacher was responsible for the male Intern.
Mr. Blackwell (a pseudonym) was 35 years of age and a graduate of The Ohio State University. With the exception of one year spent as a substitute teacher, Mr. Blackwell had spent his entire teaching career at Morningstar. Although he had no coaching duties in addition to his teaching responsibilities, Mr. Blackwell did organize the Intramural sports programs in the school and had been a cooperating teacher for eight student teachers over the past eight years. Mr. Blackwell had known the student teacher for three years since Mark had done his Freshman Early Experience Program at Morningstar.

Mr. Storey (a pseudonym), the cooperating teacher at Highview, had taught at the school since it opened twelve years ago. Prior to Highview he had taught for two years at another elementary school within the same school district. In many ways, the 36 year old Mr. Storey was exceptional as an elementary cooperating teacher in physical education. He had earned a doctorate in physical education at The Ohio State University and, like Dr. Austin, the university supervisor, had a commitment to the use of systematic observation procedures for providing interns with feedback about their teaching. Such a commitment was for Mr. Storey, as it was for Dr. Austin, a result of the influence of the physical education teacher education program at Ohio State. In particular, Mr. Storey had been part of a specific research study by Hutsler (1977, see chapter II) in which, as a cooperating teacher, he was trained in the use of systematic data collection techniques.

However, Mr. Storey was also exceptional in terms of the program
he had developed at Highview. Having found movement education to be unfulfilling, he spent a number of years creating program activities which emphasize enjoyment and variety. The feature on adventure activities such as the climbing wall was an example of this commitment.

In addition to his position at Highview, Mr. Storey had recently been employed as an adjunct professor in physical education at The Ohio State University, where his responsibilities included the creation of a high ropes course and the promotion of adventure education in schools. During the ten week student teaching experience, Mr. Storey had also worked with a university professor in field trialing and a new track and field program.

The Researcher

Since, within naturalistic type inquiry, the instrument is the researcher, it is important for reviewers of this study to understand the background which the researcher brings to the study which conceivably might have an influence on his capacity to elicit appropriate data and make meaning of what he observes.

The researcher had had a long history of involvement with student teaching in the role of university supervisor. For nine years the researcher had supervised students in both elementary classrooms and elementary physical education settings. In addition, he had also been active in developing evaluative criteria and feedback instruments for use with student teachers (for example see Henry et al 1981; Tinning, 1978). In terms of experience with naturalistic
Inquiry the researcher had, for two years, worked with a group of scholars at Deakin University, Australia, who were developing a series of case studies of schools in Australia (for example see Divola & Tinning, 1979; Fitzclarence & Tinning, 1980, and Tinning, 1982). As a graduate student, the researcher had completed three courses on naturalistic inquiry, attended a one week long seminar, which devoted considerable time to qualitative research, and completed two mini-ethnographies as course requirements.

As can be seen in Chapter V, the researcher's commitment to one research paradigm was far from unequivical. However, every effort was made to diligently perform the role of participant observer within the tenets of reasonable practice for that methodology.

**Data Collection Methods**

Throughout this study, qualitative data on tasks in student teaching were collected by means of the techniques of participant observation, interviews, and document collection. These methods of data collection have been used extensively in educational research and the following examples are testimony to the range of application of such techniques: Rist's (1978) study of racial integration in schools; Wolcott's (1973) account of life in the principal's office; Smith and Geoffrey's (1968) study of the complexities of an urban classroom; Locke's (1975) and Wang's (1977) studies of daily life in a physical education class; Tousignant's (1982) description of the task systems in physical education; and Conner and Smith's (1967) and Zimpher et al's (1980) studies of student teaching.
Participant Observation

For the duration of the spring term of 1983 (March 28-June 8) the researcher observed one student teacher. To all intents and purposes, the researcher attempted to be a "bystander" or "spectator" to the student teaching process. Such a role is categorized as a passive form of participant observation (Spradley, 1980, p. 58). As Spradley has suggested, the researcher engaged in passive participation "is present at the scene of action but does not participate or interact with other people to any great extent" (p. 59). Although some interaction was necessary for formal and informal interviews, essentially the role of passive participant was honored in that effort was made to be unobtrusive in the setting and as much as possible and to refrain from unnecessary verbal and visual interaction with the participants. There were, however, a few specific incidents of reactivity which temporarily comprised a pure passive participant stance. The following examples reveal the nature and scope of this reactivity.

- When conferences were held in the physical education office at Highview, the small size of the office made it very difficult for the researcher to be unobtrusive. On a number of occasions, Mark looked at the researcher as if to solicit some comment with respect to what was being discussed. When possible, the researcher tried to avoid eye contact with Mark and Mr. Storey.

- Mark asked the researcher on three occasions if he would help set out some cones and handball nets while Mark explained the game rules to the class. On each occasion the researcher obliged in
order to maintain the friendly relationship with the Intern.

On two occasions the researcher gave some advice to Mark regarding a teaching activity. Both occasions were ones in which Mr. Storey was not present and Mark had taught a skill incorrectly. The researcher considered that this feedback (after the lesson) was necessary to prevent inappropriate techniques from being practiced extensively. Errors in take-off for triple jump and high jump were the specific skills involved. Throughout the field work, the researcher had to consciously avoid "l lapsing" into the role of supervisor with which he was most familiar.

In contrast to the conventional ethnographic research using participant observation, this study began with a focus. Whereas an ethnography is an attempt to describe culture or aspects of culture (Bodgan and Bicklen, 1982) this study sought only to explore the nature and function of tasks in student teaching with a particular view to provisionally testing a task theory of student teaching. Although Malinowski (1935) has claimed that "without a theoretical grasp of the problem it is impossible to make relevant observations" (p. 465) and Lutz and Ramsey (1974) argue that "a theory base for ethnographic study is extremely important" (p. 6), the notion of theory they advocate refers to the loose arrangement of concepts type rather than the formalized statement of propositions type which was articulated in apriori for this study.

During each visit to the field setting (it was not always the school), the researcher kept a record of activities and events in the
form of field notes. Field notes were recorded during observation sessions and where necessary were later expanded when the researcher had left the field setting. The specific focus of the field notes was on the tasks which the intern accomplished and the instructions, both explicit and implicit, from the cooperating teachers, principals, pupils, and university supervisor which related to those tasks. In addition to the focus on tasks, notes were made of all relevant contextual factors in order to provide sufficient context detail to assist in understanding the tasks.

All verbal interactions between the intern and cooperating teachers and/or university supervisor which occurred as conferences were recorded on audiotape and later transcribed including as much verbatim account as seemed necessary to provide an adequately detailed description of the interactions.

A reflexive journal was also kept throughout the duration of the field work and in this journal the researcher's personal reactions, frustrations, ideas and hunches were recorded on a daily basis.

Interviews and document collection

A number of formal interviews were conducted throughout the duration of the field work as well as many informal interviews. Typically, informal interviews occurred incidentally during an observation session and were characterized by a few brief questions from the researcher and answers from the intern, cooperating teachers and/or university supervisor. Where possible, the interviews were recorded on audiotape but on occasions when that was not possible,
brief field notes were made as soon after the interview as possible and expanded later as necessary. Again audio tapes were transcribed in near verbatim form the same day as they were recorded.

In addition to field notes and interviews, a collection was also made of all relevant documents which pertained to the student teaching experience. In particular, these included written expectations by university supervision and cooperating teachers, lesson plans written by the intern, written lesson evaluations, graphic charts of intern teaching behaviors, and a number of critical incidents written by the intern.

Trustworthiness of Inquiry

Regardless of what research paradigm an investigator uses, there should be a common agenda for all research - to provide a warranted claim to know. Reliable or dependable knowledge is based on demonstrable reasons why something is so, and the reasons provide a warrant. When a researcher makes a claim to know something, the fundamental question which must be asked is, "Well, how do you know?" While such a question might appear trite, it goes to the very heart of the process of inquiry. Although the scientific and naturalistic paradigms have different ways of knowing, any answer to the "How do you know?" question must address the issue of trustworthiness of inquiry.

According to Guba (1981), there are four aspects of trustworthiness which need to be considered.
1. **Truth value** is concerned with the confidence which one can place in the "truth" of the findings.

2. **Applicability** is the degree to which the findings of a particular inquiry have applicability in other contexts or with other subjects.

3. **Consistency** refers to the degree to which the findings would be consistently repeated were the study replicated.

4. **Neutrality** is concerned with the degree to which the findings are a function of biases.

The following table shows the relationships which Guba claims exist between the scientific and naturalistic research paradigms and the four aspects of trustworthiness.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Scientific Term</th>
<th>Naturalistic Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truth Value</td>
<td>Internal validity</td>
<td>Credibility</td>
</tr>
<tr>
<td>Applicability</td>
<td>External validity</td>
<td>Transferability</td>
</tr>
<tr>
<td>Consistency</td>
<td>Generalizability</td>
<td>Dependability</td>
</tr>
<tr>
<td>Neutrality</td>
<td>Objectivity</td>
<td>Confirmability</td>
</tr>
</tbody>
</table>

From Guba (1981)

Table 2: Trustworthiness terms in scientific and naturalistic paradigms

Guba (1981) provides a detailed and useful explanation of the naturalistic terms as they relate to aspects of trustworthiness, and also an account of techniques which can be used in naturalistic
Inquiry to enhance trustworthiness. What follows is an outline of such techniques used in the present study.

**Credibility**

Credibility for naturalistic inquiry, in essence, is addressed by the questions "How do we know that the data are accurate accounts of the phenomena observed?"

As LeCompte and Goetz (1982) have pointed out, "The value of scientific research is partially dependent on the ability of individual researchers to demonstrate the credibility of their findings" (p. 31). Increasing faith in the credibility of data of the present study was enhanced by the following procedures.

- Prolonged engagement in the field. As a daily visitor to the field settings for the duration of the spring term, the possibility of reactivity was arguably reduced. Subjects had time to adjust to the presence of the researcher and to satisfy themselves that such presence was non-threatening. This is not to say that the presence of the researcher was at no stage perceived as threatening, but rather that the prolonged engagement in the field provided time for the modification of perceptions based upon experience. Extended field engagement also enabled the researcher to develop perceptions over time and therefore reduce the likelihood of making hasty judgements.

Persistent observation enabled the identification of persistent phenomena or qualities as well as atypical characteristics. Only by observing student teaching in its entirety could the researcher begin to understand the essential features of that process. LeCompte
and Goetz (1982) consider that internal validity (credibility) is a major strength of naturalistic research (which they call qualitative) because persistent observation over a long period of time gives the investigator extended access to the sources of data and allows for continual analysis and refinement of concepts.

- Peer debriefing, which consisted of regularly interacting with other professionals, namely the dissertation committee and fellow graduate students, provided opportunities to test developing insights throughout the study.

- Triangulation, in which a variety of sources of data (e.g., field notes, interviews, documents) were used to cross check information and interpretations, was a technique used throughout the study. Examples of such cross examination can be found in Chapter VII.

- Referential adequacy material was collected in the form of documents, field notes, and audio tapes. The material provided a permanent record against which findings and interpretations could later be tested.

- Member checks, whereby collected data and interpretations are checked with the members from which the data was obtained is, according to Guba (1981), "the single most important action inquirers can take, for it goes to the heart of the credibility criterion" (p. 85). During this study, member checks were done in an ongoing fashion by many casual questions to the participants, and later by the review of relevant parts of the drafts for this dissertation by the participants themselves.
Establishing structural corroboration was also an important procedure used following the field work phase of this study. This procedure necessitated the testing of all datum and interpretations against all others to be sure there are no contradictions or internal conflicts which could not be explained by the data.

Transferability

Transferability (subsequently called "fittingness" by Guba and Lincoln, 1982) is a controversial notion within naturalistic inquiry. For example, the issue of applicability may be claimed by some to be only relevant to the scientific paradigm (as generalizability) for naturalistic research is not concerned with generalizing to other settings or subjects. But transferability relates to providing idiographic or context specific statements that do not imply any applicability to other contexts. Applicability can only be inferred by readers of a statement to their own situations.

Within this study, an attempt was made to collect data which would enable a sufficiently "thick" description (Geertz, 1973) of the context in which the student teacher operated such that the fittingness of the findings to any other setting can be inferred by a reader.

Dependability and Confirmability

Dependability is the naturalistic inquiry equivalent of reliability. Essentially it is concerned with the consistency of
data obtained using the researcher as the Instrument. As insights and understandings of the researcher increase throughout the study variation in data and interpretation are inevitable. The issue of dependability relates to the need to be able to explain such variability in terms not only of error (e.g., fatigue) but also of increased Instrument (researcher) sensitivity.

Confirmability is concerned with bias and the role of researcher predispositions in collecting data and making inferences. Guba (1981) suggests that within naturalistic inquiry, the burden of neutrality is shifted from the investigator to the data, "requiring evidence not of the certifiability of the investigator or his or her methods but of the confirmability of the data produced" (p. 82).

For both dependability and confirmability, Guba (1981) suggests that an "audit trail" be established during the study and both a dependability audit and a confirmability audit be undertaken after completion of the study. A dependability audit should be done by an external auditor to comment upon the degree to which acceptable practice has been followed in the study — that is, it is concerned primarily with the process of inquiry. A confirmability audit on the other hand, is concerned that the conclusions reached were carried out in a reasonable manner. The focus is on the product of the study, but is not concerned with whether or not the auditor would come to the same conclusion (Lincoln & Guba, 1982).

Within this study, an audit trail was created by maintaining the following archival materials.
- all raw data, including field notes, interview notes, audio tapes, and select documents.
- a log of all activities, including field contacts with dates, purpose, substance and outcome.
- a log of all methodological decisions.
- a log of all data analysis activity.
- a reflexive diary in which the researcher's own perceptions, insights, frustrations, etc., were recorded.

At the conclusion of the study a professional peer (a fellow graduate student studying naturalistic inquiry) completed dependability and confirmability audits using the procedures outlined by Lincoln and Guba (1982). The audit reports are included as Appendices L and M.

In addition to audits, confirmability and dependability were also enhanced by the process of triangulation mentioned previously with relation to credibility. The use of multiple methods and multiple forms of data allowed for a strenuous check of investigator predictions. The use of low inference descriptions of phenomena, such as verbatim accounts (narratives) and the use of multiple examples, also provides for enhanced dependability of data. As McCall (1969) has stated "The key to data quality control in participant observation is, thus, the thorough use of multiple incidents of any particular fact and an insistence on a very high degree of consonance among these incidents, tracking down and accounting for any contrary incidents" (p. 130).
Theory Testing in Naturalistic Research

Although naturalistic methods are commonly used in developing theory (e.g., Yinger, 1978; Schwab, 1979; Glaser & Strauss, 1974) rather than testing or verifying theory, it is not inappropriate that they be used for this process also. Varenne (1982) made the point that 50 years ago Margaret Mead went to Samoa to test psychological generalizations. Varenne, himself an ethnographer, stated that "I have come to realize that schools are, in fact, good places to check and refine theories..." (p. 121). McCutcheon (1981) claimed that one of the roles of interpretation of qualitative data can be to "...serve to exemplify and illuminate theory or point to inadequacies in theory" (p. 6). Granted, the support for testing theory cited above, and also that provided by Barton and Lazarsfeld (1967), in their paper "Qualitative Support for Theory", is for a form of theory which earlier was classified as "conceptual theories or constructs" (Snow, 1973). Within the present study a more systematic and positivistic form of theory was the focus, namely the causal process form (Snow, 1973), and specific examples of testing this form of theory within qualitative type research could not be found in the literature. However, the researcher considered that the nature of the task theory of student teaching was readily adaptable to testing by the analytic strategy of analytic Induction and that this strategy has some notable applications in field research (namely, Angell, 1936; Cressey, 1950; and Lindesmith, 1968). Although these examples have used open ended interviewing for data collection, Bodgen and Bicklen
Actually, analytic induction is more than a strategy for analyzing data. It is also an approach for collecting data and for developing and testing theory.

Early claims by Znaniecki (1934) that analytic induction is the true method of the physical sciences and should be the true method of the social sciences also have been subsequently challenged by Robinson (1969) and Turner (1969). Although Robinson found analytic induction useful in guiding research and hypothesis formulation he believed that it does not establish clear-cut causal determination since it provides only the necessary and not the sufficient conditions for the phenomenon to be explained. Turner, on the other hand, although basically in agreement with Robinson's criticism of the efficacy of analytic induction to provide causal explanations, does claim that the strategy does permit the logical deduction of causal hypotheses. Certainly there is considerable controversy over the logical functions of analytic induction, however, in general the following statement by Glaser (1965) reflects how the strategy is described within contemporary sociological research: "Analytic induction is concerned with generating and proving an integrated, limited, precise, universally applicable theory of causes accounting for a specific phenomenon..." (p. 219). Bodgen and Bicklen (1982) have suggested that the strategy is a method of thinking about and
working with data, and that most qualitative studies tend to borrow parts of its procedure and employ it in a more causal manner.

As Bodgan and Bicklen (1982) point out, "the procedure of analytic induction is employed when some specific problem, question or issue becomes the focus of research" (p. 66). The basic procedure of analytic induction is as follows:

1. A rough definition and explanation of the phenomenon is developed early in the research process.
2. One case is studied in the light of the hypothesis in order to determine the degree to which it explains the data.
3. If the hypothesis does not fit the empirical facts, then either the hypothesis is modified or the phenomenon to be explained is redefined.
4. During data collection the researcher actively seeks negative instances in which the hypothesis does not fit the data.
5. The procedure of examining cases of the phenomenon and modifying the hypotheses or redefining the phenomenon continues until a universal relationship is established, with each negative instance calling for a new modification or redefinition.

(Robinson, 1969)

Within the present study, a definition and tentative explanation of the nature of tasks in student teaching was provided by the task theory. In actual fact, the theory consisted of a number of tentative hypotheses which became working hypotheses. Robinson (1951) claimed that "the fact that the method of analytic induction formalizes and systematizes the method of the working hypotheses is
probably one reason why it has been so fruitful in applications such as Angell's, Lindesmith's and Cressey's" (p. 199). According to Geer (1969) working hypotheses are generated partly out of apriori knowledge of the system being studied, partly from first observations, and partly from the researcher's conceptual and theoretical positions. The function of the working hypothesis is considered to be an important aspect of the process of scientific inquiry for even disproof of an hypothesis often suggests the sort of modification which can in turn create a better hypothesis (Robinson, 1951). The process of redefining the phenomenon so as to exclude cases which contradict the hypothesis is what has been called "limiting the universal" (Robinson, 1951). In essence, it entails limiting the range of applicability of the explanatory hypothesis, and it has a long history in science.

Beginning with the tentative task theory, the procedures for this study included gathering data on all tasks in the student teaching process and subsequently testing each hypothesis to see whether or not it was supported by the data. Modification of the theory via modification of hypothesis and/or limiting the scope of the theory was a continual process throughout the study. If the theory which exists at the conclusion of the study explains the nature and function of tasks in student teaching, then, this "proof of an instance will be proof of the possibility" that the theory might have wider application than to the specific case examined.

Goetz and LeCompte (1981) proposed four separate dimensions for classifying analytic strategies in naturalistic type inquiry. First,
an inductive-deductive dimension refers to the place of theory in a research study. A purely inductive study would begin with data collection and build theory from relationships discovered among the data. A purely deductive study would begin with a theory containing propositions and would attempt to determine whether or not the propositions fitted the empirical data subsequently collected.

Second, a generative-verificative dimension in which a generative study would seek to discover constructs or theoretical propositions from empirical data, and a verificative study tests propositions developed elsewhere. Typically, verificative research also attempts to generalize to appropriate larger populations. Although generative research is often inductive it also may be informed by theory. Verificative research is frequently deductive.

Third, the constructive-enumerative dimension focuses on the unit of analysis of a study. Constructive research aims at deriving units of analysis from data – the analytic constructs are discovered or developed. Enumerative research on the other hand uses previously derived categories or units of analysis and data are systematically counted using such categories. Fourth, a subjective-objective dimension distinguishes between research which collects and analyzes subjective data (subjective) and research which applies conceptual categories which are readily visible to outsiders (objective).

Conceptualizing each dimension as a continuum, Goetz and LeCompte classified analytic induction at the inductive, generative, constructive, and subjective ends of each dimension. Although they admit that in reality, extremes are rare and combinations more
typical, it would seem that to claim that "analytic induction is employed exclusively in generative research" (p. 57) is to fall to distinguish it from the constant comparative method developed by Glaser and Strauss (1967). Certainly analytic induction generates theory, but it also provisionally tests theory, and this distinction is essential for the use of analytic induction in the present study. As Goetz and LeCompte (1981) admit "research that poses the problem as one of hypotheses to be verified or refined requires a different approach than research directed at formulating or generating hypotheses" (p. 64).

Organizing the Data

In order to facilitate the matching of instances of phenomena to the working hypotheses, a simple coding system was employed. Each line of the field notes and transcripts was numbered together with each page. An incident recorded on line 26 of page 15 in the field notes was coded as 26(15). An incident recorded on line 26 of page 15 in the transcript notes was coded as (26)15. Thus, as incidents of, for example task specification, were discovered in the detailed records, reference to the incident in coded form was made under the category heading of task specification. Such progressive grouping of incidents in coded form enabled the researcher to return to the groupings and subsequently place examples of incidents in the domain of certain hypotheses.

Also, by rereading all data a number of times at the conclusion of field work a check was conveniently made on all previously coded
Incidents. Most times this check resulted in a similar interpretation of an Incident, but on occasions, when disagreement was evident, the researcher again checked the incident to attempt to ascertain the best interpretation.

Although the literature related to naturalistic research in general, and analysis Induction in particular, claims that data analysis begins during data collection (i.e., the analysis and collection are not distinctly separate phases as in the scientific paradigm), this condition was more difficult to meet than was anticipated. Certainly, a form of analysis began in this study within the first weeks of field work (as explained below) however, the extent to which analysis could "keep up with data generation" was limited by the daily demands of the data collection. As such, most of the analysis of data with respect to hypotheses testing had, of necessity, to be performed subsequent to the field work.

**Summary of Research Design Features**

- This study was a case study of a single student teacher teaching in two settings under the guidance of two cooperating teachers and one university supervisor.
- The focus of the study was the provisional testing of a task theory of student teaching which was developed apriori.
- Given the hypothesized nature of tasks in student teaching and the desire to portray participant meanings, it was considered that descriptive information in the form of qualitative data would be most appropriate.
Qualitative data were obtained by means of participant observation, interviews, and document analysis.

An attempt to increase the trustworthiness of the inquiry was made by using procedures recommended by Guba (1981) and by the establishment of an audit trail and subsequent conduct of dependability and confirmability audits.

Data analysis and provisional testing of the task theory of student teaching was undertaken by means of the process of analytic induction.

Chapter Summary

Within this chapter background details of the research settings were presented. Also, the background of the student teacher, university supervisor, cooperating teachers, and the researcher were discussed.

Data collection methods were outlined and included participant observation, interviews and document collection. In essence, the researcher followed the student teacher for the duration of the semester recording observational, written, and verbal data from lessons, conferences, and planning documents.

Throughout the data collection, efforts were made to increase the trustworthiness of the inquiry, and within this chapter the specific considerations of trustworthiness are presented. A case for using naturalistic research methods to test theory was also presented and details of the analysis procedure known as analytic induction was outlined as the method of analysis employed.
This chapter is divided into two parts. The first part addresses the first research goal outlined in Chapter I; namely the provisional testing of the task theory, and the second part addresses the "what is out there?" question which constitutes the second major research goal. The specific research questions which correspond to each major goal are outlined at the beginning of each section.

For the purposes of this discussion it is considered worthwhile to distinguish between the "macrotask" of student teaching itself, and the "microtasks" which together comprise the student teaching experience. The "macrotask" is student teaching, with a formal judgement of the Intern's overall performance and the award of a recommendation. "Microtasks" on the other hand are the numerous small tasks which the Intern is expected to accomplish on a daily basis as part of satisfying the general "macrotask" requirements. These two levels of analysis will be used throughout the following discussion.

Within the analysis and discussion, a disproportionate number of examples are used which relate to Mark's experiences at Highview Elementary. Although Mark spent equal time at both Highview and Morningstar schools, as explained in Chapter VI, the researcher spent
relatively less time at the Morningstar setting. Also within this chapter there is a number of examples which are used on more than one occasion for illustrative purposes. Although an attempt was made to use as many different examples as possible in the analysis and discussions, the selection of examples was based mainly on appropriateness rather than on variety. When one example best illustrated two different concepts then that example was used twice.

PART 1

The two research questions which relate to the first major goal and which focus this point of the analysis and discussion are:

- To what extent are the working hypotheses confirmed or disconfirmed by the data?
- Are modifications to the theory necessary as a result of testing, and if so, what is the nature of the modifications?

As outlined in detail in Chapter VI, an attempt to enhance the credibility of the findings of this study was made by means of prolonged engagement in the field, peer debriefing, triangulation, and member checks. Although every effort was made to honestly implement these procedures, it became evident following the field work phase of the study that one major problem concerning the credibility issue remained unresolved. The problem concerned the number of incidents which were available as evidence for hypothesis confirmation or disconfirmation. For a number of the hypotheses there were insufficient incidents of the phenomenon under focus to
enable even the most tentative provisional judgement to be made. The problem actually was the result, in part, of the finite duration of the student teaching experience. When a phenomenon was witnessed only a few times during the term there was no possibility of extending the field observation in an attempt to gather more data relevant to that phenomenon. It would have been necessary to observe more than one intern over more than one term to obtain such additional data and such a commitment was beyond the scope of the present study as it was originally conceived and conducted.

For a detailed review of the appropriateness of the processes used in this study to enhance credibility the reader is directed to the dependability and confirmability audit which is reported as Appendix L. What follows is an attempt to provisionally test the working hypotheses (restated below) by seeking data which either support or refute each hypothesis.

The working hypotheses

Hypothesis 1.1: If incomplete task specification, then task ambiguity.

Hypothesis 1.2: If task ambiguity is excessive, then intern will seek more information.

Hypothesis 1.3: If task ambiguity, then task risk.

Hypothesis 1.4: If task difficulty, then task risk.

Hypothesis 1.5: If task risk is excessive, then the intern will attempt to negotiate the task demands downward.

Hypothesis 1.6: If task risk is not excessive, then task performance.

Hypothesis 1.7: If negotiation downward is successful, then the probability of task congruence is reduced.
Hypothesis 2.1: If supervisor monitoring, then increased probability of task congruence.

Hypothesis 2.2: If no supervisor monitoring, then decreased probability of task congruence.

Hypothesis 2.3: If contrived consequences are applied, then increased probability of task congruence.

Hypothesis 2.4: If contrived consequences are not applied, then decreased probability of task congruence.

Hypothesis 3.1: When natural consequences are more powerful than contrived consequences: If task is contingently developed, then the probability of task congruence is decreased.

Testing the Hypotheses

These working hypotheses were tested not in sequential order but concurrently throughout the study. In outlining the testing of the hypotheses it was felt that conceptual understanding was enhanced by a modified order of presentation. Thus the numbers do not necessarily follow the order listed above.

Hypothesis 1.1: If incomplete task specification, then task ambiguity.

Alexander (1982) made a valid comparison between Doyle's (1981) definition of a task and Mager's (1975) three components of instructional objectives. Doyle defined a task as "a set of implicit or explicit instructions about what a person is expected to do to cope successfully with a situation" (1981, p. 2). Mager (1975) claimed that an instructional objective should include detail of situation, performance, and criterion. According to Alexander
(1982), Doyle's "situation" matches Mager's "situation", Doyle's "what a person is expected to do" is analogous to Mager's "performance", and Doyle's "to cope successfully" refers to the degree to which the performance meets what Mager called the "criterion". Given such similarities, it is considered instructive to define complete task specification as including details of situation, performance, and criteria.

To test this hypothesis, it would have been necessary to search for instances of task ambiguity and to then determine whether or not they occurred in the presence of incomplete task specifications. However, according to Doyle (1979), when there are gaps in information about performance expectations (that is insufficient task specifications), and therefore when task specification is incomplete then ipso-facto, task ambiguity exists. To this end, it was realized that the relationship between task ambiguity and task specification was not a testable hypothesis but rather was definitional by nature. In terms of task theory, this hypothesis should be deleted and replaced by the following operational definition of task ambiguity.

- A task which is communicated with incomplete task specification is an ambiguous task.

Such a definition implies that ambiguity is independent of the intern who is to complete the task. While it is arguable that task ambiguity might create a condition of unsureness in the intern, such a condition, as an internal state within the individual, is not amendable to testing and would therefore add little to the development of the task theory.
Many of the tasks of student teaching were incomplete in terms of having situation, performance and criterion specified (see Appendix E). The examples which follow were chosen to reveal something of the range of task specifications and the corresponding degree of ambiguity of the tasks.

Example 1:

In a meeting before the term began, the task of using student names was set.

Dr. Austin: "I want you all to use student names. I think it's an objective you all can achieve. Begin this in your first week. I will count them and tell you how many names you use - it will help your confidence. I will be more demanding if you have got repeat classes - that is the same class 4 or 5 times each week. If you only see them once a week I can't be as demanding of you."

(16, March)

As a task, the situation although not explicitly stated was nevertheless clearly understood to be when teaching during the student teaching term. The performance was explicit - "use student names" but the criterion was unstated. Reference was made to the fact that different criteria would be used in different settings, but details of, for example, the number of names used each class period, was left unknown.

Later in the term a criterion for use of names was negotiated with Mr. Storey "well for 20 minutes lets say 15....". However, at
least, initially (for the first 3 weeks of the term) the task of using student names remained ambiguous.

Example 2.

A number of tasks were given in the context of advice rather than as formal commands. But even so, these "suggested tasks" could be interpreted with respect to their ambiguity.

Dr. Austin: "Mark could perhaps develop some task cards to have at each station. You teach the whole group then let them work with the task cards at each station." (25 April).

Using the task cards is the performance, track and field is the situation, however no criteria are suggested.

Mr. Storey: "Just get into the habit of moving around a little more." (4 May) Although the situation (a lesson) is implicit, and the performance is stated (moving around, there is not detail regarding the criterion of moving around.

Dr. Austin: "...you need to think about wet weather too, just in case it's wet you will have to do it inside." (25 April) Again the situation is a lesson to teach, (implicit within the general context of the discussion which preceded this task), the performance is revealed (plan for wet weather), but the criteria (what is an acceptable wet weather plan) is absent.

Tasks like refereeing a water polo game, or a game of indoor hockey were invariably never specifically explained. Typically the task was given following a short period of observation of the cooperating teacher performing the task. In the case of refereeing
touch football, no modeling was available. The capacity of the Intern to perform the task of refereeing was assumed by the cooperating teachers. Specific criteria for determining an adequate performance at the refereeing tasks were never articulated.

When tasks were initiated by demonstration (model) by the cooperating teachers, typically they contained abiguity. For example in discussing the activities for the track and field unit, Mr. Storey says "Here's our shot put technique (he demonstrates) - we don't do the turn" (21 April). The situation and the performance are clear, and although stating that "we don't do the turn" is a useful negative example which helps define appropriate performance, there is no real explanation of criteria. Thus, although a modeled activity is useful, in and of itself it can not supply the complete details which would be required to eliminate task ambiguity.

Some of the major tasks within the student teaching experience tended to evolve in detail and specifications as time and discussion progressed. Typically, Mark would not be given complete task specifications but rather would be given an activity (namely a major organizing theme for occupying curricular time; e.g., track and field) and the details would be filled in over time or as required. The following example reveals this process.

Mark had been told on the 19th of April that he should start to think about the track and field program coming up.

Mr. Storey: "What we are doing up until field day is 5 star track and field. (Mr. Storey then explained how the 5 star point system operated.) "We have got to get them
through the 5 star thing in the first two weeks. You are going to be lead teacher - although all three of us will work on it. You have to organize it and David (the FEEP student from Ohio State) and I will just help you out."

"On your lesson plans, list what stations you have...you will need to get super organized. If you can give me a rough sketch by Friday."

Two days later, the day before the Friday deadline, Mr. Storey and Mark talked further about the track and field unit.

Mr. Storey: "We won't have any exercises as such, we will try to warm up with the activities. Here's our shot technique (demonstration). We don't do the turn. And in the disc we will stand here like this (demonstration)."

Mark: "Are we going to have say a triple jump inside with half the class and half the class outside doing this and then switch?"

Mr. Storey: "No. There are three of us...switching wastes so much time. See some of these activities you can teach as a total class - just to get the steps down - we aren't going to go for distance here. But we are going to time them here (pointing to running events written on a sheet of paper).

"The second week we will do the javelin, disc, shot, rotate then to hurdles, long jump and 1500 meters next week. I'll start out and teach all Monday's classes."
Wednesday morning you can see how I do it and if you want to make some changes in your lesson you can do that. Just count on somebody helping you during this time" (21 April).

If we consider the track and field unit to be a task in itself (albeit comprised of many smaller tasks) then even in its evolved form it displayed ambiguity. At no stage were criteria articulated and all negotiation and explanation focused on the performance details.

At the larger level of analysis, the macrotask of student teaching itself also displays ambiguity. Certainly the situation was abundantly clear for Mark was assigned to teach at two different schools - an elementary school and a middle school. The performance was articulated by various individuals responsible for the student teaching experience. At the most general level, the director of student teaching for all students seeking certification (be that elementary teaching, secondary mathematics, music teaching, physical education teaching, etc.) told the students at the first meeting that "you serve the interests of both the cooperating teacher and the supervisor from the university. You must get along with them for grading purposes and for obtaining an appropriate reference."

Although given as advice rather than an attempt to define the performance requirements of student teaching, the significance of the advice is such that it perhaps represents the nature of real or actual task with respect to the student teaching experience.
In the case of Mark, "the interests", of the university supervisor were very clearly articulated. Dr. Austin went to considerable length to be as explicit as possible in defining the task specifications for his student teachers. Mark was given a list of expectations by Dr. Austin who commented that:

"It seems a lot...but they are really only routine matters and I want to make sure that everyone is accountable for what I'm focusing on, and if I don't communicate them to you in written form I find it difficult to hold you accountable for something you may have just only heard" (16 March).

Appendix C shows the specific performances which Dr. Austin expected. Appendix B shows the details of the criteria for evaluation/feedback which was also given to all his students at the 16 March meeting. In fact, the criteria list was actually a list of specific objectives of which Dr. Austin said:

"You can expect feedback on those objectives and I guess I hope you achieve satisfactory performance on those objectives. I'm confident that none of you will receive an unsatisfactory grade, but it's quite possible and the unsatisfactory grade would be based on the non-achievement of those objectives...."

Each of these objectives are actually tasks (see the Mager, 1975 and Doyle, 1981 discussion earlier), but for each specific task criterion details are less than complete. For example, one of the teacher management-related objectives was "use positive behavioral interactions to accomplish management goals". In this task, the situation implicitly was the intern teaching the class, the
performance was to "use positive behavioral interactions", however, "to accomplish management goals" gives insufficient detail of criteria. This particular task, however, subsequently became more specific in terms of criteria following a period of negotiation.

To return to the macrotask itself, Dr. Austin did mention that satisfactory performance on the objectives was necessary, and although stating that an unsatisfactory grade would be based on the non-achievement of the objectives, there was insufficient detail with respect to criteria. For example how many non-achieved objectives would result in a failed grade? Thus, the macrotask does possess ambiguity as it was explained at the first meeting of students with the university supervisor. However, Dr. Austin did endeavor to be as explicit and as complete as possible in his task specifications and the fact that ambiguity was still present will be addressed in some detail when the issue of accountability is discussed later in this chapter. Suffice it to say at this time that it may well be that some ambiguity will, for most practical purposes, always be characteristic of the macrotask.

Hypothesis 1.3: If task ambiguity then task risk.

Testing this hypothesis would have required a search for instances (and negative instances) of task ambiguity. However, while it was possible to identify instances of ambiguity by means of their task specifications, no such operational definition of task risk was available. Task risk, as defined by Doyle (1979), contained two
elements - the chance of gaining an appropriate grade, and the consequences of failure - but both elements were difficult to operationalize on an individual basis and in relation to each other. Although task risk is a complex concept which could not be operationalized at this point in time, it seemed reasonable to expect that the chances of an intern gaining an appropriate recommendation would necessarily be decreased if the task requirements were incompletely specified.

If task risk can be conceptualized as ranging from low to high, it was thought that intern anxiety might be a useful proxy for operationalizing task risk. Perhaps the higher the task risk the greater the intern anxiety. A given antecedent event (for example the setting of a particular task) will elicit certain operant behavior (for example performance of the task) and will also elicit a certain respondent or emotional responses (for example anxiety). Certain tasks will, due to the previous history of reinforcement, elicit greater anxiety than others and an intern will, over time, come to associate certain task demands with the emotion of anxiety. The anxiety an individual intern associates with a certain task is idiosyncratic and will influence the degree of risk which the task represents to that intern.

Researcher: "Do you have any anxiety about the grade you might get?"

Mark: "No I don't 'cause I feel confident. I think I know what I'm doing and I'm going to do a good job."

Researcher: "So you're not scared of failing?"
Mark: "No, no."

Researcher: "Given that you say you don't know the standard to be used for assessment and you feel confident of getting a good grade, how do you fill in the blanks regarding what you should do?"

Mark: "I think those blanks are filled in as you go along. As you progress through the program you start to know what is expected of the teacher."

In a sense, anxiety may be considered to be a manifestation of the task risk as perceived by an individual student teacher (see the discussion of task challenge on page 243). If the chances of gaining an appropriate grade (or recommendation) were low and the consequences of failure were high (e.g., no chance of employment) then it would be entirely reasonable to consider such a situation to be characterized by a degree of anxiety on behalf of the intern. In Mark's case however, although the consequences of failure to receive a good recommendation were high (as for all students), his own faith in his capacity to gain an appropriate recommendation was also high and perhaps this explains why he expressed no open anxiety over the macrotask itself. Mark did however show a degree of concern over a possible delay in receiving feedback regarding his performance as an intern.

Mr. Storey: "I'll observe you for about three or four classes this week and collect information (on a systematic observation form) and then once we have that we will sit down and talk about your strengths and weaknesses."
Mark: "After the three?" (expressing concern)

Mr. Storey: "After the three! Then we'll set some goals."

Mark: "So you're not going to tell me anything until after the three?"

As shown above, Mark did not know all the necessary specifications for the macrotask at the beginning of the term because the task was not completely specified. Since lack of specification will reduce the chance of gaining and appropriate grade (simply because the intern does not know exactly what the supervisors require), then logically, an ambiguous task must possess task risk.

At the microtask level, while there was no recommendation or grade contingent upon each task, the task performances were consequated often on an individual basis - see hypothesis 2.1. In addition, there was a cumulative effect of individual microtask performances which was seen to relate directly to the final recommendation.

Researcher: "What would happen if management time was increasing rather than decreasing. How would you feel about that in relation to your grades/recommendation - would it worry you in terms of that?

Mark: "Yes it probably would worry me. It would be a factor - I'm sure I'd be thinking well that a major factor in teaching- that you have the least amount of management time as possible - so that would be important 'cause on my recommendation he might say that 'management time
wasn't that good. That's one thing that Mark needs to work on."

The above three examples reveal (albeit briefly) something of the nature of Intern anxiety with respect to task ambiguity and the chances of gaining an appropriate recommendation. It does seem that the relationship between Intern anxiety and task risk is more complex than first considered and that the use of anxiety as a proxy for task risk is inappropriate. Since no operational measure of task risk was possible, the hypothesis failed to be confirmed or disconfirmed. Although it was possible to define task ambiguity as a partial function of task risk this did not allow provisional testing of the hypothesis. It is believed, however, that this hypothesis has potential and its retention in the task theory is recommended.

Hypothesis 1.4: If task difficulty, then task risk.

The level of difficulty of a task will vary from Intern to Intern. In essence, difficulty is a function of an Intern's ability, the supervisors' expectations, and the teaching setting.

Figure 19: Factors affecting task difficulty.
Every task has some degree of difficulty, ranging from extremely easy to exceptionally hard. Given that task difficulty will influence the chance of gaining an appropriate grade/recommendation (i.e., the more difficult the task the less the chance) it follows that task difficulty influences task risk.

Mark made a prediction with regard to the difficulty of tasks which he would attempt throughout the term.

Researcher: "What do you think will be the most difficult tasks for you in this student teaching? Will they be in management, lesson planning, discipline?"

Mark: "Probably planning. You see you are never quite sure what your cooperating teacher wants - I think feeling out the cooperating teacher will be the first thing. I'm not sure exactly what he wants to emphasize the most for this team handball lesson - the first day before class I'm going to have to find out exactly what he's looking for."

Dr. Austin also had an opinion with regard to task difficulty for Mark.

Researcher: "How difficult was the student teaching task for Mark?"

Dr. Austin: "Oh easy, easy. He just didn't have to worry about any major discipline problems. I would say it was an easy environment for achieving the very minimum requirements we have for a student teacher. But the five star program presented some difficult problems for a student teacher and many others would have floundered in that
situation. Teaching the same handball lesson to four different classes on the same day for three weeks is pretty easy - I think that."

For Dr. Austin, the level of difficulty of a task for an Intern was partially a function of the established structures or classroom ecology. Presumably the same task (e.g., one of classroom management) might be difficult in one setting and easy in another setting, even for the same Intern. Both settings, Highview and Morningstar, had well established structures which made many tasks relatively easy for Mark.

The only task difficulty which Mark admitted to was coping with the many activities of the five star track and field program in a single lesson - the same task identified as difficult by Dr. Austin. The follow example reveals his frustration.

Researcher:  "Were you happy with the last class?"
Mark:        "No!"
Researcher:  "Why not?"
Mark:        "Well I think we're putting too many things into one day and you've got to be rushed and you're thinking too many things."
Researcher:  "But why are you doing that?"
Mark:        "Because we don't have time - we are on a limited time."
Researcher:  "OK. But what if this was your school/class, would you do it that way?"
Mark: "This year I probably wouldn't have had all the events and then next year start early and have all the events."

Researcher: "So really you're under orders to work this way - the program has been suggested by Mr. Storey and you just go along with it?"

Mark: "That's exactly it. I would not have had so many things in five star programs. I would rather have them learn it properly before moving on."

Just Is with hypothesis 1.3, the lack of an operational definition of task risk prevented the hypothesis from being formally tested. Moreover, unlike task ambiguity which was defined in terms of the task specifications, task difficulty itself had no operational referents because, like task risk, it is a complex phenomenon of which the Intern's individual ability is a partial function. The examples above reveal only that for this Intern the combination of factors influencing task difficulty were such that for the macrotask in particular there was little difficulty.

Again, since it was not possible to disconfirm or confirm this hypothesis it remains problematic, but its potential contribution to the task theory is considered worthy of continued investigation.

Hypothesis 1.2: If task ambiguity is excessive, then the Intern will seek more information.

As shown above, many of the tasks which were given to Mark were ambiguous, usually because they failed to specify criteria for the
task performance. However, it seemed that not all ambiguous tasks resulted in Mark seeking more information. For instance, during swimming lessons in the first week of term Mr. Storey told Mark that he needed to use three types of supervision both at the pool and elsewhere - namely critical, specific and general.

Researcher: "What does Mr. Storey expect from you with regard to these forms of supervision?"

Mark: "Well I would say he expects me to know which of the three you're in and then act accordingly."

Researcher: "Did Mr. Storey detail the behaviors which would be appropriate for those instances?"

Mark: "He didn't really come out and say that but I think he assumed I knew."

Researcher: "What about your behavior - how will you behave differently in different situations?"

Mark: "I think it finally comes down to using common sense to assess the danger of the situation."

Although Mark was unsure of the exact task requirements, he nevertheless made no attempt to seek more information. It seemed that Mark made a judgement for each task with respect to whether the ambiguity was excessive or not excessive. A certain degree of ambiguity for most tasks seemed acceptable.

There were, however, numerous examples of more information sought following a task specification. For this hypothesis to stand, the instances of "seeking more information" should all follow the setting of an ambiguous task. Consider the following examples:
Example 1.

Mr. Storey and Mark discuss the plans for the bicycle safety program to be conducted the following week.

Mr. Storey: "We have never done this before. Probably only half the kids will bring their bikes. Some won't bring one because they don't have a 10 speed bike. Some aren't good at riding bikes but you have got to make them feel part. We have got to get them all included. If we can spend the first five minutes or so talking about bike safety."

Mark: "This is just a one day thing?"

Mr. Storey: "No, we will do it everyday in gym."

Mark: "Yes but I mean the kids will only get one day per class."

Mr. Storey: "Yes."

Mark: "So we are going to need a bunch of things."

Mr. Storey: "We can set them up in the parking lot or on the playground. But we will have Tuesday morning first thing to do that. You (emphasized) will because I'll be with the new kids who are coming to the school."

Mark: "OK"

Further planning and questions continued.

Example 2.

As Mark was about to leave for the day, Mr. Storey discussed what he wanted to do with the track and field lessons.

Mr. Storey: "The disc, shot and hurdles let's do stations."
"So we can do the javelin all at once?"

"Yeah do the javelin all at once and then do stations - teach all the skills at the beginning of each station then just rotate them - spend about 10 minutes at each one. I wouldn't worry about the long jump. They have that down.

"Now where is the disc, javelin and shot done? Outside?"

"Here is the way I've been teaching it. (Javelin) There are some yellow lines on the parking lot and I tell them to stand on it. They run down that line keeping the javelin with that line."

"They run on the line?"

"Yes - so they are already organized. We have 10 javelins so get 10 lines - then all throw and retrieve. Nobody steps over the curb until all the javelins are thrown, then they all go down and come back and the next person."

"Then for the hurdles we'll use the 70 meter thing and I'll have it all laid out - we'll have 2 rows of hurdles. Then the disc and shot we'll have them throw off that end of the blacktop. Be flexible now - because if I get enough shots we can teach the shot and javelin the same time and then we could do the disc and hurdle and maybe the long jump."
In both examples, Mark's questions for more information were in response to task specifications which possessed ambiguity. Presumably, the ambiguity of these tasks was sufficient (excessive) to prompt Mark to ask questions. There were no instances of more information being sought when the task was fully specified. As Mark said, "I think I understand everything. If I don't, then I always ask." Thus it is concluded that there is provisional support for this hypothesis.

Hypothesis 1.6: If task risk is not excessive, then task performance.

As with the previous hypotheses which included the concept of task risk, this hypothesis could not be formally tested. However, the lack of an operational definition of task risk at this point in time does not in and of itself mean that the concept is of no value. In the examples which follow task risk is considered to be not excessive when there is no attempt to negotiate task demands down. It is thought that using such internal behavior as a proxy for excessive task risk, some further understanding of the relationship between task risk and task performance might be obtained. Appendix E gives details of most of the microtasks for Mark's experience. As shown in the discussion of the hypothesis H 1.5, there were very few instances of attempts at negotiation by Mark and thus it may be argued that task risk, in general, was not excessive for Mark. A further perusal of the data revealed that task performance (be it congruent or incongruent with task specifications) did occur on
almost all occasions. Two exceptions will be related here although it should be understood that both instances are of an incidental rather than a significant nature.

The first incident related to planning to teach the 5 star track and field unit. Dr. Austin suggested that Mark "could perhaps develop some task cards to have at each station." Although stated more in the context of advice rather than a "must do" task Mark did not attempt to perform the task. When asked why, Mark replied: "I thought about it - I thought that for those kids, with the cards we already have (recording cards) that was starting to get too much." However, perhaps the reason given relating to the pupil's capacity to handle additional information masked the fact that, for Mark, trying something new when it was not clear that it was expected in a definite sense, was something to be avoided. Mark revealed that:

"I don't really like doing or trying new things - maybe it's just because I'm starting off now and I'm doing my student teaching - I'm kind of fresh at it and I like to be organized and like everything to go smooth. If we start trying new things, things kind of get a little disorganized." (25 May)

How similar this is to findings of Zimpher et al. (1980), Popkewitz (1977) and Iannaccone (1963).

Given the casual manner in which the task was specified and the fact that there was no attempt on Mark's behalf to attempt to negotiate, it can be argued that task risk was not excessive and yet performance did not follow specification. Two possible reasons seem to be worthy of consideration. First, that the task was thought by
Mark to be purely optional and he subsequently decided not to follow it through, or second, that Mark considered the risk associated with performing the task to be excessive because he believed the task to be too demanding of the pupils at that time.

The first reason suggests that tasks may indeed have too little risk (e.g., there are no consequences for failure) and that performance does not necessarily follow task specification in such a circumstance unless the task corresponds to the Intern's interests. The second reason suggests that tasks may have risk which is independent of the formal task consequence which would be provided by the formal application of contrived consequences. In other words a task might be considered to have risk by virtue only of its natural consequences. In this example, Mark feared that the class itself might react negatively to the extra demands, irrespective of any supervisor arranged consequences. Thus, within student teaching, Doyle's (1979) definition of risk relating only to the contrived consequences of grades would seem to be inadequate. Risk in student teaching tasks is associated with positive or negative consequences which can be either contrived or natural.

Another example concerned the task of measuring the track around the car park at Highview. Mark was told by Mr. Storey to measure the running track, but Mark forgot to do so and eventually Mr. Storey himself helped Mark do the job.

Although it would be possible that an Intern may use the excuse of forgetting when tasks present high risk, rather than attempting the task and failing, a more plausible explanation would be that the
Intern would only forget tasks which were of low risk. As mentioned previously, task consequences is a partial function of task risk and it would seem reasonable that if the consequences for task incongruity were such that task risk was high then forgetting or claiming to forget would be to the Interns disadvantage. If however, task risk was low because the consequences were mild or non-existent, then forgetting would be plausible. Of course, if the consequences were not aversive it would also be possible that the Intern could consciously avoid the task. In the example above, however, Mark admitted that it (the task) had "simply slipped his mind" and he had not attempted to avoid it. Since no consequences were stated for this task, as suggested above, some degree of task risk may be necessary to facilitate task performance.

Perhaps it would be appropriate to modify the definition of task risk for reference to tasks of the micro variety as distinct from the macrotask. Doyle's definition still seems appropriate for the macrotask of student teaching where there is a grade or recommendation. However, for the microtasks, grades are not applicable and it would be more appropriate to conceive of risk in terms of the chances of obtaining positive reinforcement weighted against the consequences of failure. The consequences, as stated above, could be either contrived or natural. In many instances within student teaching positive reinforcement would take the form of gaining and maintaining pupil cooperation.

In terms of this hypothesis, given the existence of negative instances, it seems that modification is necessary. Some provision
for task avoidance following less than optimal task risk seems necessary. Such a conception of degree of risk and task performance was articulated in the initial task theory. The remodified relationship for task risk and task performance is shown below.

Figure 20: Remodification of Relationship Between Task Risk and Task Performance

The following two hypotheses should replace hypothesis 1.6.

-- If task risk is excessively low, then the intern will attempt to avoid the task.

-- If task risk is optimal, then task performance.
Hypothesis 1.5: If task risk is excessive, then the Intern will attempt to negotiate the task demands downward.

Negotiation of task demands only applied to the microtasks of student teaching within this study. The macrotask was not negotiated (perhaps in part because of its general ambiguity but perceived low risk). A number of examples support the hypothesis that negotiation of task demands does occur, however, it appears to be rather more complex than the above mentioned hypothesis indicates.

The first attempt at negotiation was at the group level rather than specifically initiated by Mark. In the second week of student teaching, Dr. Austin met with the seven Interns he was to supervise for the purposes of setting further tasks and explaining expectations. The following transcript reveals an attempt at task negotiation.

Dr. Austin: "I require a long range plan - some idea of what you're going to be teaching and when you will be planning a detailed unit plan - similar I guess to what you did in secondary core."

Intern: "Each??" (Expression of dismay)

Dr. Austin: "If you have got 4 or 5 units to teach - obviously you are going to have to decrease the elements in the unit plan. OK! If you are only teaching one unit plan it will be a pretty detailed unit plan."

Intern: "Are you going to be worried about the format of that plan or the content?"
Dr. Austin: "Well, I'll give you 'the format'. I don't expect it typed - I prefer it to be typed cause then you can use it again. No, I wouldn't expect 5 unit plans like secondary core."

(Almost as an afterthought):

"And of course daily lesson plans will be available for the cooperating teacher and me to see when we come to see you."

Intern: "Are these going to be as detailed as they had to be in elementary core?"

Dr. Austin: "I'm not sure how much detail was required in elementary core."

(left unanswered) (16 March)

Although this example may be classified as an example of "seeks more information" it never-the-less became an attempt to negotiate the requirements of the unit plan task down to the point where they were less demanding than those which the interns experienced in two earlier courses. In the example above, the interns successfully obtained more task information (hence reduced task ambiguity), however, the more complete task specifications revealed a level of task difficulty which, by increasing task risk to an excessively high level, resulted in an attempt to negotiate the task demands down. This relationship between task ambiguity, task difficulty and task risk is not explained adequately by the model in Figure 13 and to this end a revised model is presented below. In particular the revised model (Figure 21) reveals how a successful or unsuccessful
Instance of "seeking more information" may become an attempt to negotiate the task demands down and how excessive risk may result in either seeking more information or negotiation of task demands.

Figure 21: Modified relationship between task congruence, task ambiguity, task difficulty and task risk
A number of specific examples of attempts to negotiate task demands occurred later in the term with Mark. The first relates to the learning of pupil names. Mark had originally set himself the task of learning pupil names.

Mr. Storey and Mark were in conference in the physical education office after Mark had taught the previous period.

Mr. Storey: "First of all let's talk about use of student names. Towards the middle of the session there you were starting to get the hang of it. Here's what we are going to do - anytime we take some observations we'll put this down on the chart. What we'll have to do is work out a goal for you."

Mark: "Know some of their names - that's one of my objectives." (That is Mark had set this for himself at the start of the term as a management objective.)

Mr. Storey: "Yeah - what do you think is realistic? We can always adjust to it."

Mark: "The only problem is that you don't get to see the kids as much as at a junior high cause you don't have them everyday - that's the only problem."

Mr. Storey: "You don't have to know (emphasis) the names but just get into the habit of having your paper there - it's not fair to ask you to learn 300 names - I don't even know them all - perhaps 95 percent but you have just got to get into the habit of taking that list out with you - if you can maybe learn 4 or 5 in each class OK."
Mark: "OK."

Mr. Storey: "So what's a goal for you? - you had 8 today. That in 20 minutes - I will probably never observe you longer than 20 minutes."

Mark: "Well what do you think? I don't really know what a realistic goal would be for their names."

Mr. Storey: "Well for 20 minutes lets say 15 - start out with 15 - that will push you a little bit."

(15 April)

Although Mr. Storey finally set a target with respect to Mark's learning of pupil names, Mark, in the process, was quick to point out that not seeing the elementary pupils as often was going to make the task more difficult. Mr. Storey adjusted the task accordingly.

Following another period of teaching in which Mark was observed by both Mr. Storey and Dr. Austin, Mark attempted to reveal the task difficulty (hence task risk) to Dr. Austin.

Mr. Storey: "I didn't hear you say one name in the first 20 minutes."

Mark: "I started using names in the middle of the game."

Mr. Storey: "Well, that's one of your objectives to learn the names and this is the third week of the term and still you're not."

Dr. Austin: "You may have to, as an objective, set 50 percent as a target - perhaps if we just look at a couple of classes, not every class - but because it's the objective you set you have to think of some different
strategies to increase names. What you could do is just pick out 5 kids names per week - just work on 5 - bit by bit, gradual approximation. I don't think its a crucial objective but it helps you to relax. Name tags might be useful."

Mark: "A problem Is they only meet once a week."

Dr. Austin: "That makes it really tough to learn names. I appreciate that - that's why I appreciate your objective of only 50 percent. Under the circumstances, 50 percent is OK."

(18 April)

Certainly, in this instance, negotiation of the task demands downward was readily accepted and, if anything, encouraged by both supervisors. Mr. Storey instructed Mark to hold a counter as he taught and to record every instance in which he used a pupil's name. Mark used Dr. Austin's suggestion of using name tags and the very next period recorded 24 instances.

Another example related to the task of reducing management time:

Mr. Storey: "Another thing we have been looking at is management time. Now that is any time that the students aren't actively involved in learning. OK - getting the kids lined up - getting the equipment ready - the first class you had 20 percent of the class time was spent in management - the second class was 16 percent and the third was 16 percent - and that's too much - alot of beginning teachers have that cause you don't have the
skills to get that down yet - our goal should be 10 percent, 10 or less. So that in a 20 minute observation, only 2 minutes or less should be spent on management time."

Mark: "Do you think your management time will be higher than normal when you're introducing a sport or game?"

Mr. Storey: "Yes - all that has an influence (is influenced by) on the type of lesson you teach."

(15 April)

It seems that Mark was attempting to highlight (and hence have taken into consideration) the fact that management time is context dependent and that a 10 percent objective for all lessons was unrealistic. Such adjusted expectations were subsequently honored by both Mr. Storey and Dr. Austin. Dr. Austin's comments are an example of this phenomenon.

Dr. Austin: "I appreciate that with something like high jump it's hard to have high activity time - I don't expect 50 or 60 percent activity time at all but I think that in the triple jump today you could have had another couple of groups."

(29 April)

At times throughout the term it appeared that Mr. Storey actively assisted in the reduction of task demands for Mark. The previous example, relating to the learning of pupil names, is a case in point. Perhaps, as Doyle (1979b) found with classroom teachers, the cooperating teacher must seek the cooperation of the intern and is
willing to trade-off some task demands for such cooperation.

The examples described above demonstrate that a form of negotiation did take place with respect to the task demands. Given that the intern makes an individual judgement of task risk, it was not possible to search for negative instances in which negotiation might have occurred when task risk was tolerable.

The data for this hypothesis reveal that instances of task negotiation downward did occur throughout the student teaching term, however, it was not possible to determine whether or not those instances occurred in the presence or absence of excessive task risk. Again the problem was with the lack of an operational definition of task risk. Thus, while it was not possible to confirm or disconfirm this hypothesis, the following modification is suggested for future testing:

If task risk is excessive, then the intern will either seek more information or will attempt to negotiate the task demands downward.

Hypothesis 1.7: If negotiation downward is unsuccessful, then the probability of task congruence is reduced.

As revealed in the discussion of the previous hypothesis, attempts to negotiate the task demands downward did occur within the student teaching term. However, in all but one instance the negotiation attempts were successful and as a result very little data was available to test this hypothesis. The occasion of the unsuccessful attempt occurred in relation to the use of the hand held
counter which Mark had been instructed to use to record how many times he used pupil names. Mark had recorded 24 instances of his use of pupil names in the preceding lesson and when discussing the expectations for the next day, Mr. Storey told Mark to "use your clicker again" to record names. Mark replied "I don't have name tags for the 10:20 class. Mark was in fact attempting to negotiate the demands of the task downward by providing information as to why he might be unable to perform well with respect to using pupil names. Mr. Storey told Mark to "try it without name tags - just find a kid and ask his name." Mark's attempt at negotiation was unsuccessful.

In terms of task performance congruence with task specifications, Mark had, subsequent to the direction to record during the 10:20 class, recorded 74 names used in one class - however it was not known whether or not they were for 50 percent of the pupils in the class or merely a large number of repeats. And more to the point for this example, this record was not for the 10:20 class but was instead for the 8:30 class for which Mark had name tags. Mark's performance regarding names for the 10:20 class was not checked by Mr. Storey and hence it is not known whether or not the performance was congruent. As such no confirming or disconfirming evidence is available for this hypothesis. However, since this hypothesis has logical appeal, and because the data were insufficient to confirm or disconfirm it, the hypothesis should remain in the theory until subsequent data can prove it to be inappropriate or untenable.
Hypothesis 2.1: If supervisor monitoring, then increased probability of task congruence.

For the purposes of this task theory of student teaching, supervisor monitoring can be of two forms. First, monitoring includes instances in which the supervisor obtains data on task performance (usually by direct observation, but also can be from checking an event recorder [e.g., counter] listening to an audiotape, etc.) and determines the degree of congruence of task performance to task specifications. Second, supervisor monitoring can include instances in which the supervisor observes the intern's teaching performance but makes no specific attempt to compare performance with specification.

To find confirming or disconfirming evidence for this hypothesis, instances of monitoring were sought and also evidence of associated task congruence. Stated as it is, this hypothesis does not suggest that all instances of monitoring are accompanied by task congruence, but rather, that the probability of task congruence is increased when monitoring occurs. As such, the presence of an instance of monitoring which is not associated with task congruence would not necessitate immediate disconfirmation of the hypothesis. In essence, the hypothesis is stating a trend relationship rather than a functional relationship.

Given, the large number of tasks which were set during the student teaching term, it would not be practical to cite each example of supervisor monitoring. Instead, a representative selection has
been made to reveal the association between monitoring and task congruence.

Example 1.

During the second meeting of the group of Interns supervised by Dr. Austin, a number of tasks was set.

Dr. Austin: "I'd like the schedule card filled out during the first week of teaching."

"What I'd like you to do is prepare three management related objectives which you plan to achieve in the first two or three weeks."

Also, the Interns were asked to use an observation form (given to them) to record the teaching of a fellow Intern or their cooperating teacher.

Dr. Austin: "The basic task will be to observe one student in the class, and based on those definitions of behavior you will record every 10 seconds what the student does."

(16 March)

At the next group meeting, Dr. Austin asked for, and collected, all the completed schedule cards. Also Dr. Austin collected the three management objectives from each Intern and requested a verbal description of the results of the observation task. For all three tasks, the task performed was congruent with the specified task. Dr. Austin's check for task congruence was an instance of supervisor monitoring.
Example 2.

On the 15 April, Mr. Storey and Mark were discussing how to deal with a particularly rowdy class.

Mark: "Is there anything that you do in particular for a class like that?"

Mr. Storey: "Was it interfering with the class?"

Mark: "No but during our skills, where the other classes really stick to skills, some of the guys were horsing around."

Mr. Storey: "Well then that's misbehavior and you've got to react to that right there and then. All you have got to do is that once - give them a time out. What you could do is what we did yesterday - find a couple of kids in that same group that's horsing around and say 'you can stay out for a while' then play a little basketball or something - that usually works."

On the 19th April, Mark placed two misbehaving pupils in time-out. Later, at the post lesson conference:

Mr. Storey: "What did the two students in time-out do?"

Mark: "They were arguing, and when I went over to them they started pushing each other and getting a little out of hand."

Mr. Storey: "What did you say to them?"

Mark: "I told them I would like each of them to go over by Mr. Storey's office (where the time-out box was) and have a seat there and I'll be with you in a minute."
Mr. Storey: "Good. You handled that well."

In this example the task performed was congruent with the task specified and it was performed in the presence of supervisor monitoring.

Example 3.

During a conference following a lesson taught by Mark at Highview:

Mr. Storey: "Try to get into the habit of interacting with kids positively for doing a good job (then shows Mark a graph on which baseline data re behavior interactions were recorded over 8 lessons - see appendix F). See, here is how we started out, positive is the blue line, the first class period you only had one and then six is the highest you have. And negative - just a couple, and while it's OK to tell them they aren't doing a good job, you should have a lot more positive than negative. So try to use more positive behavior interactions." (28 April)

Mark was then given a hand counter by Mr. Storey and told to record the number of positive behavior interactions he gave. The next lesson Mark used the counter and Mr. Storey (who did not observe that lesson) asked Mark how many behavior interactions he gave - Mark told him three. Mr. Storey said it is really important. "You're doing a great job. You just need to work on behavior interactions. Use the clicker and put your own down on the chart. Just keep track yourself."
The next day (May 11), Dr. Austin observed Mark teach again at Highview.

Dr. Austin: "I know Mr. Storey has got you working on your positive behavior interactions - how many did you get?"

Mark (Looks at counter) "I got 16."

Dr. Austin: "I got 19 so I could have missed a few. It's a good little reminder.

"But you can't be positive all the time. If you are the kids lose the meaning of being positive - they say he is like that all the time - big deal. So your baseline can't be too positive 'cause when something good happens and you want to be positive it loses effectiveness."

"Your positive behavior interactions for individuals I think were good - at the start of the lesson they were good for the group."

This sequence of Incidents reveals that Mark did perform the task congruent with the specifications and in the presence of supervisor monitoring. However, it also reveals that when a task is not completely specified (in this case no criteria were given), then congruence is a more subjective judgement. In the absence of criteria (e.g., number of interactions per lesson) Dr. Austin interpreted 19 or so as appropriate and praised Mark accordingly. The same result might have been considered less than adequate by Mr. Storey.
Although Mark was told to keep his own record of behavior interactions, it is obvious from the graph (Appendix F) that when Mr. Storey ceased to record the data after baseline recording, Mark failed to complete that task. Mr. Storey did not check to see if Mark did or did not record his own data.

Example 4.

Dr. Austin had observed Mark performing the warm up exercises with his class. Because he could not stay after class to give Mark feedback personally (he had to go to another school), Dr. Austin left a note for Mark which suggested that he should refrain from performing all the warm up activities with the class because doing so prevented him from observing any inappropriate pupil behavior during those activities.

Returning to Morningstar school a few days later, Dr. Austin observed Mark teach again, and subsequently met with him in conference.

Dr. Austin: "The other most pleasing thing for me was during the warm up. You got my note the other day about observing the kids warm up?"

Mark: "Yes."

Dr. Austin: "I don't know if that made the difference."

Mark: "It only takes one!"

Dr. Austin: "OK, well that's encouraging to me that you can control your behavior and that you can respond to feedback."

(27 April)
In this instance the task had been specified on the note and Mark had performed the task congruently with those expectations in the presence of supervisor monitoring.

Example 5.

Following observation of a lesson taught by Mark on April 27th at Morningstar School, Dr. Austin referred to a task set by Mark himself on March 16.

Dr. Austin: "One of your management goals is quote 'after first four weeks of class the students will be changed and ready for class in four minutes.' How long do you think it took? -- It was six minutes!"

Mark: "We told them our expectations today."

Dr. Austin: "Well I think that four minutes is realistic."

The next week, Mark achieved his objective of having the class changed and ready in four minutes. Dr. Austin was not present to monitor, although the female cooperating teacher (who was not really directly responsible for supervising Mark) was present in the gym at the time. This example revealed Mark performing a task congruent with specifications in the absence of supervisor monitoring. However, it must be recognized that the task performance was monitored the week before and judged to be incongruent.

Perhaps monitoring does not have to be present at every occasion of task congruence but rather there needs to be an expectation of monitoring. That is, if the intern expects to be monitored, then the probability of task congruence increases.
Example 6

The following series of Incidents relating to the use of teacher demonstrations provides a further insight into the role of monitoring.

On the 27th of April, Dr. Austin pointed out to Mark that all the children in the class could not see his demonstrations in track and field. Two days later, following observation of another track and field lesson, Dr. Austin said to Mark, "I think it's useful if you give a demonstration from both sides in the high jump because kids need to see 'that's my side, that's what I do.'" No mention was made of whether or not all the class could see the demonstration although Mark had specifically moved some children so they could see.

The following week in a conference with Mark Dr. Austin said:

"OK, a few general points you need to be more conscious of what your position is during the demonstrations. In terms of positioning for the whole group and showing them what's required in the skill. The demonstration is all they get to model and the feedback has got to relate to the demonstration. If you have the kids in lines in front of you you should demonstrate from this way, this way, and this way (models the side and facing positions) so they can see from different angles and picture better what the shot put is all about."

"So using the demo to emphasize teaching points is absolutely essential. So if you can just try to spend a little bit of time...making sure that the students can
visualize through the demo what those teaching points are. You can even use graphics to help - transparencies shown on wall for example - as a reference point. So just think about working on the demonstrations. I would like to kind of see some - I guess a little improvement in those - in the demonstrations."

After the next observation by Dr. Austin, again the demonstration was a point of focus.

Dr. Austin: "Just a couple of minor points - with the demonstration, watch the positioning of kids. You get very quickly involved in giving them teaching points and some kids get behind others and don't really watch. In the hurdling demonstration, which was a good demonstration, some of the kids were behind others and really couldn't see. So get kids on either side."

(11 May)

Overall, the performance of teacher demonstrations by Mark reveals a different association with supervisor monitoring than the first four examples. On the first instance of monitoring by Dr. Austin, subsequent to the initial task specification, the task was performed congruently with the specifications, however, such congruence was not consequted. Instead, an additional dimension to the task was suggested. The final references to the task of demonstration revealed task incongruence in the presence of supervisor monitoring. It may well be that on these two particular occasions the demands of the lessons were such that Mark was so
concerned with getting through all the activities that he simply overlooked the specifics of the demonstration task. Certainly Mark had expressed concern to the researcher over the difficulty of completing all the instructional activities within one lesson. In fact, Mark had suggested that were he free to plan without constraint he would attempt to teach fewer activities each lesson.

Granted such a possible explanation does not alter the fact that all cases of supervisor monitoring were accompanied by task congruence. However, given that there were only two instances of task congruence in the absence of supervisor monitoring and many of task congruence with supervisor monitoring this hypothesis (which was stated in probabilistic terms) is provisionally confirmed.

Hypothesis 2.2: If no supervisor monitoring, then decreased probability of task congruence.

For this hypothesis, a search was made for incidents of no supervisor monitoring and the corresponding degree of task congruence associated with each incident. Given a limited number of major tasks required of the Intern, and the relatively frequent monitoring of performance (at least at Highview), only four examples could be found. A more detailed description of supervisory practices is given later in the chapter.

Example 1.

During the first week of his student teaching at Highview, Mark was given a list of things to do by Mr. Storey (see Appendix D). Included on the list was a meeting with the school principal, Mrs.
Taylor (a pseudonym). At the meeting, Mark was required to ask Mrs. Taylor what her expectations were for a sound physical education in the school. The researcher was present at the meeting and recorded that Mark did not ask Mrs. Taylor about her expectations. Although Mr. Storey checked with Mark to determine whether or not he had completed other tasks on the list (e.g., calling the president of the PTA to ask her expectations of physical education), no monitoring of the task with Mrs. Taylor was recorded.

Since the non-performance of a task is a form of task incongruity, this example reveals an incident of task incongruity associated with no supervisor monitoring.

Example 2.

At a post lesson conference on 25 April, Dr. Austin became involved in the planning of the 5 star track and field unit which had just begun. The unit was new to Mr. Storey and subsequently much discussion focused upon the most appropriate manner to organize the activities. The intent of Mr. Storey was to introduce all classes to all track and field events in the three week unit and a problem of insufficient time for instruction in each event was recognized. Dr. Austin suggested that Mark:

"could perhaps develop some task cards to have at each station. You teach the whole group then let them work with task cards for each station. That's what I'd like to see you try. Try and teach a few of the skills to the whole class and then reinforce what you taught with some practice activities at different stations."
Although the specification of the task was somewhat vague (no criteria), what started as "could perhaps develop" soon became "That's what I'd like to see you try", and consequently an expectation concerning the task was expressed. During subsequent observation of Mark's teaching of track and field, Dr. Austin made no attempt to monitor that particular task. Again, failure to perform a task is a form of task incongruity and this incident reveals such incongruity associated with no supervisor monitoring.

Sometime later, Mark was asked by the researcher why he didn't use task cards for the 5 star activities as Dr. Austin had suggested:

Mark: "I thought about it - I thought that for those kids with the cards we already had (recording cards for distance jumped, etc), I thought that was starting to get too much."

Example 3.

Mr. Storey considered that praising pupils who behave appropriately is a more satisfactory form of classroom management than admonishing pupils for inappropriate behavior. Following a lesson on team handball which Mark taught the following conference feedback was given.

Mr. Storey: "Here are some things that you said that worked well. 'I like the way everybody froze,' 'I like the way everyone paid attention,' That's a behavior interaction and you'll find that the more behavior interactions you can get the better the class will behave and the more learning time the students will get."
"Some of the negative things you said 'we are wasting our time' - all the negatives have an influence on learning time." (15 April).

Mark continued to work on increasing the number of positive comments and reduce the negatives but during times of atypical amounts of inappropriate behavior he tended to "revert" to the previous method of gaining classroom control - namely the use of admonishment and or threats. For example, on 27 April a class began misbehaving and Mark told them "we are wasting our time", and also that if they didn't do things right he would send them back to their class. Mark was not monitored on that occasion.

On another occasion (13 May) during a track and field lesson Mark again used admonishment and threat to gain class control. This time the lesson was observed by Dr. Austin who later made no comment specifically about the use of such admonishment but did praise Mark for being prepared to wait for pupil silence and for communicating that expectation to the class. However, the fact remained that on this occasion incongruity occurred in the presence of supervisor monitoring.

Example 4.

Not all instances revealed task incongruity associated with no supervisor monitoring.

In relation to the task of reinforcing good behavior, Mr. Storey told Mark to make use of what he called the "good behavior box". This box, made by Mr. Storey, has a hole in the top through which a student may put his/her hand and withdraw a plastic reward.
Mr. Storey: "...just say I like the way you did that, and let them reach into the good behavior box." (15 April).

Mark performed this task on a number of occasions in the absence of any monitoring by Mr. Storey.

Possibly a distinct ton needs to be made between tasks which can be successfully completed in one attempt (e.g., award having the children run downhill for the triple jump) and tasks which are developmental in nature (e.g., reduce management time to less than 10 percent). For a developing or evolving task, it is likely that task performances will gradually approximate the specified task, and therefore might be judged to be incongruent during the approximation phase. Such incongruity is of a different order than incongruity for a simple one-off task and has different implications with respect to monitoring. In a developing task, monitoring can be classed as an aid to successive approximation whereas for the one-off task monitoring most likely takes the form of a final judgement of congruence. Given that this hypothesis is concerned with probability and not absolutes, the data tend to provisionally support the hypothesis.

Hypothesis 2.3: If contrived consequences are applied, then increased probability of task congruence.

Although Doyle (1981) considers a task to be fully specified when the situation, performance and criteria are articulated, such a specification contains no description of any consequences which may follow either successful or unsuccessful task completion. As
Alexander (1982) points out, "What is required if some probability of completion is to enter the analysis, is the additional description of the consequences to follow performance." (p. 30).

For the task theory, a distinction has been made between the types of consequences which follow performance. All performances will result in some natural consequences which are a direct function of the impact of the performance itself on the environment in which the performance occurs. For example, a teacher behaves in a certain manner and his/her pupils respond accordingly—such pupil behavior is a natural consequence of the teacher behavior and may or may not reinforce the teacher to continue to behave in that manner. On the other hand, there are also consequences which are not naturally applied by the environment but which are contrived for the specific purpose of developing, maintaining or eliminating certain behaviors. These contrived consequences within student teaching are delivered by the university supervisor or the cooperating teacher and can be of two types. "Arranged consequences" are those which are specified before task performance, and "feedback consequences" are those which were not specified in advance but delivered following performance.

Interestingly, with the exception of one instance, there were no arranged consequences for the tasks in student teaching. There were, however, many examples of feedback consequences delivered by both the supervisor and the cooperating teacher.

The following examples illuminate the relationship between contrived/feedback consequences which were applied by either supervisor or cooperating teacher.
Example 1.

In preparation for a track and field day at Highview, Mark was given the task of obtaining four stop watches which were to be used for timing track events. Mark had indicated to Mr. Storey that he would be able to obtain them from Morningstar school. On field day (16 May) Mr. Storey, Mark, and a student on a Freshman Early Experience Program from The Ohio State University, began setting up for the days activities. Mark travelled to Morningstar and found the track coach (from whom he was to borrow the watches) was in conference with the principal for the duration of the morning. Mark returned to inform Mr. Storey that he could not obtain the watches. Mr. Storey quickly informed Mark that the program could not operate without the watches and dispatched him to get them anywhere he could. Mark subsequently returned to Morningstar, managed to find the track coach (who was having a short break from his meeting), collected the watches and returned to Mr. Storey at the athletic field.

In this example, the task had been specified by Mr. Storey, Mark's performance had been incongruent and subsequently negatively consequated (in the form of Mr. Storey's insistence that the watches must be obtained). Mark's second performance was then congruent. Had Mr. Storey not applied consequences to Mark's incongruent first performance, the likelihood of a second and congruent performance would have been reduced.

Example 2.

Mr. Storey and Mark practiced the triple jump briefly to prepare for class. On 27 April Mark began to teach the triple jump using a
demonstration and an explanation. He called out "same, same, different, together" in an attempt to get the pupils to understand the placement of their feet. As Mark called out the sequences, Mr. Storey moved to Mark's side and told him that he should have been saying, "same, same, different, both." Mark subsequently used the correct explanation.

Although some of the children were still having great difficulty with the movement sequences of the triple jump Mark began to measure their performance (such were the time pressures of the three week unit). In between classes Mr. Storey told Mark it might be better to say "hop, step and jump" rather than "same, same, different, both". However, in the next class, Mark said to the class "Mr. Storey wants me to try a different method but I'm not. I'm going to use the old method cause I know you can do it right." Mark then proceeded to call "same, same, different, both" but demonstrated with two hops.

Mr. Storey observed the confusion and called "Mark do the hop, step and jump." Then Mr. Storey took over the class and Mark retired to the sidelines to watch. Following the class, the conference revealed Mark's confusion.

Mr. Storey: "Well, how did that class go?"

Mark: "Well I'm going to look over the book cause I guess I'm messed up."

Mr. Storey: "You were doing it right - same, same, different, both - you did it right the other day - but that's the first time you demonstrated."
Mark: "Same, same, different, both - you have to take two hops right?"

Mr. Storey: "No."

Mark: "Well, what's the same, same mean?"

Mr. Storey: "Same as your take off foot."

Mark: "Oh, I see." (Revalation)

Mr. Storey: "See your seeing some frustration now - I haven't done this five star thing before either- but the thing is to keep practicing and I think that we're at a point now where we know what we're doing yes well I was thinking for some reason two hops that's why they were messed up - that was my fault."

"Ok well you've got it now - just a hop, step and jump - break the skill down."

The next day Mark taught the triple jump using the correct demonstration and the specified chant "hop, step and jump". After a few practices most pupils were performing the skill well and Mark called to Mr. Storey "What do you think of that Mr. Storey?"

Within this example the task was specified but clearly not understood by Mark. Mark's performance was incongruent and it was negatively consequtated by Mr. Storey (taking over the class). Following discussion in the conference, Mark's next attempt resulted in task congruence. As with example 1, the likelihood of task congruence was increased following application of contrived consequences.
Example 3.

Following observation of Mark teaching a track and field lesson at Highview, Dr. Austin set a new task.

Dr. Austin: "OK one major comment - which I would like you to try when you teach this class again - when students are at stations or at different activities, the first responsibility you've got - and I think its a crucial thing - is to make sure you get an overall view of how the thing is going. See if each station is operating - especially when you have got eight or ten kids at one station like in the relays. You need to make sure that in the first couple of minutes you get to each station and make sure that they are on task and then you can spend some time going and giving feedback on a roving basis."

Mark: "So move around first and get everything going and then stop off."

Dr. Austin: "Yes - I really think that's important."

Mark: "What kind of problems do you run into with that - do you just get kids who aren't on task?"

Dr. Austin: "Yes that could be but it's just a good idea to make sure that everything is going as you want it to."

Two days later following observation of another lesson.

Dr. Austin: "I think the relay worked okay outside and the good thing was that they got plenty of time to practice."
"It's really hard to get high activity time in track and field but I think you were aware of some of the things I mentioned last time - like you had a quick perusal of each station - I think the biggest problem today was that the kids didn't choose certain activities - very few wanted to throw the javelin or the shot - they wanted to run and..."

In this example, the task performance was congruent with specifications, the task performance was monitored and contrived consequences (in the form of feedback) were applied.

The following two examples are representative Incidents of task congruence in the presence of supervisor monitoring but without any application of contrived consequences.

Example 4.

During the meeting of all student teachers on the last week of the winter term, it was stated that there was an expectation that as Interns, they were expected to become part of the school life. More specifically, during the first week of the spring term, Mark was given a typed list of tasks to complete. Four of the tasks (see Appendix D) related to learning about the school life by observing an art class, a music class, and a primary and an Intermediate class in their homeroom. Although Mr. Storey asked Mark if he had completed the tasks, and such a check represented a form of monitoring, there was no application of any contrived consequences. Perhaps this was entirely understandable since the tasks were of a very general nature and no consequences were ever stated.
Example 5.

Mark was teaching an introductory activity to a class of fourth graders. Mr. Storey whispered in his ear (the class could not hear) to use more floor area for the introductory activities. Mark immediately spread the class out more in accordance with the suggestion. Although an incidental task, the performance was congruent with the specification and, because Mr. Storey was observing the lesson there was supervisor monitoring. However, no feedback was given regarding this performance and no consequences were arranged as part of the task specification.

Although there was a majority of tasks which were monitored and which were congruent without contrived consequences, compared with a minority of congruent task performances with contrived consequences, there were also a number of tasks in which no judgement could be made regarding the application or non-application of contrived consequences. As such, although the trend appears to support the hypothesis, there was insufficient evidence to confirm or disconfirm and as such the hypothesis remains problematic. Continued inclusion of this hypothesis in the theory is considered appropriate.

Hypothesis 2.4: If contrived consequences are not applied, then decreased probability of task congruence.

As explained in the previous hypothesis, almost all of the instances of contrived consequences were of the feedback type rather than arranged. There was only one example of an arranged consequence task and this was the macrotask discussed by Dr. Austin before the
student teaching term began. Subsequent to distributing a list of what he called criteria for evaluation/feedback, Dr. Austin stated that "I'm confident that none of you will receive an unsatisfactory grade - but it's quite possible, and the unsatisfactory grade would be based on the non-achievement of those objectives...." (16 March)

The consequences, namely an unsatisfactory grade or a satisfactory grade, were made explicit and were to be applied contingently with the non-achievement or achievement of the list of objectives. For Mark, his performance was judged to be congruent with the specifications and he received positive reinforcement in the form of a satisfactory grade. Thus, for arranged consequences at least, task congruence was associated with the application of consequences.

The following examples reveal two different relationships between the contrived consequences and task congruence.

Example 1.

On 15th April Mr. Storey told Mark "I want you to measure the inside of that track out there. Take a couple of kids and make some marks." Mark had not completed the task by 19th April and he asked "How many meters is your track here?" Mr. Storey said "That's what we have to measure."

The non-performance of the task at this stage represented task incongruence and there was no application of contrived consequences. On the 25 April, however, Mr. Storey, Mark and the FEEP student all measured the track prior to painting lines on it.
Example 2

The task of learning student names, although originally set by Mark himself as a teacher-management related objective, was an example of a feedback consequence task. Dr. Austin had indicated at the beginning of term that the non-achievement of the objectives on the evaluation list would be consequated by an unsatisfactory grade. There was, however, no specific criterion detail concerning how many objectives needed to be achieved, or whether in fact the non-achievement of any one objective would result in an unsatisfactory grade.

As the term progressed there was a great deal of negotiation of the task demands downward and there was also a number of instances of monitoring and feedback from Dr. Austin and Mr. Storey. For most lessons, Mark's performance of this task was incongruent with the task specifications and, although feedback consequences were applied, task congruence was the exception rather than the rule relating to use of pupil names.

In order to understand the relationship between the application of consequences and the probability of task congruence, some understanding of the history of applied consequences would seem to be necessary. For example, if the supervisor or cooperating teacher stated that certain negative consequences would be applied, and on a number of occasions no consequence occurred, then the Intern might consider that on future occasions failure to perform congruently with
specifications might, in all probability, not result in the application of negative consequences.

While it is tempting to suggest that applied consequences are more powerful than feedback consequences in facilitating task congruence, the data do not support or refute such a claim. In fact, the provisional testing of this hypothesis remains problematic since there is insufficient data to offer conformation or disconfirmation. Continued inclusion of this hypothesis in the theory is considered worthwhile.

Hypothesis 3.1: When natural consequences are more powerful than contrived consequences: If task is contingency developed, then the probability of task congruence is decreased.

When Mark had the task of refereeing games of water polo it became obvious that the children had played the game before and understood when rule infringements occurred and also what to do when in such situations. In other words, the class were aware of a set of established procedures and, on occasions when Mark failed to call an infringement, or if he called one which was not understood, they would quickly inform him of that fact.

This example seemed to point to the possibility that if the specified task (e.g., refereeing the water polo game) was congruent with the established structures (e.g., previously understood rules and interpretations), and if the task was controlled by natural consequences rather than contrived consequences, then task congruence
might not be decreased. In the light of this reasoning the hypothesis was modified to:

When natural consequences are more powerful than contrived consequences:

If task specification is incongruent with established structures and the task is contingency developed, then the probability of task congruence will be decreased.

Limited support for this hypothesis was provided by the following example. Mark was given the task of increasing the number of positive behavior interactions he made to pupils in each class. In a track and field lesson the children were behaving inappropriately and Mark responded not by praising children who behaved appropriately, but rather, by admonishing those who were misbehaving. Mark commented that

"...the kids were too wound up coming outside I think, and seeing all the equipment set up. That's a pretty high spirited class anyway and everybody just wanted to get going in the activity and setting up the relays took time to organize and I think that was the problem with the kids too wound up."

In other words, the natural consequences within the lesson were such that, for Mark, other means of gaining control (other than positive behavior interactions) seemed necessary and he "reverted" to the use of verbal admonishment and threats ("If you don't line up then we will go back inside."). Mark, however, thought the problem he had with using behavior interactions was related to his inability to know all the pupil's names.
"I like to use a kids name like 'John, I like the way you did that' - rather than 'Hey, what's your name? I like the way you did that.' So I would use a lot more behavior interactions if I knew the kid's names."

Further data would be needed to confirm this hypothesis but the supportive data do indicate that it is worthy of inclusion in the task theory for further testing on another occasion.

**Summary of Testing**

In summary, the attempt to provisionally test the task theory by means of its specific working hypotheses resulted in the following modifications, deletions, and provisional confirmations.

The following hypotheses were deleted and replaced by an operational definition.

Hypothesis 1.1: If incomplete task specifications, then task ambiguity.

Replaced by: A task which is communicated with incomplete task specifications is an ambiguous task.

Insufficient evidence was available to disconfirm or confirm the following hypotheses and as such they remain problematic.

Hypothesis 1.3: If task ambiguity, then task risk.

Hypothesis 1.4: If task difficulty, then task risk.

Hypothesis 1.7: If negotiation downward is successful, then the probability of task congruence is reduced.

Hypothesis 2.3: If contrived consequences are applied, then increased probability of task congruence.
Hypothesis 2.4: If contrived consequences are not applied, then decreased probability of task congruence.

The following hypotheses were modified in the light of the data:

Hypothesis 1.5: If task risk is excessive, then the Intern will attempt to negotiate the task demands downward.
Modified to: If task risk is excessive, then the Intern will either seek more information or attempt to negotiate the task demands downward.

Hypothesis 1.6: If task risk is not excessive, then task performance.
Modified to: If task risk is excessively low, then the Intern will attempt to avoid the task. If task risk is optimal, then task performance.

Hypothesis 3.1: When natural consequences are more powerful than contrived consequences:
If task is contingently developed, then the probability of task congruence is decreased.
Modified to: When natural consequences are more powerful than contrived consequences:
If task specification is incongruent with established structures and the task is contingently developed, then the probability of task congruence will be decreased.

Provisional tentative confirmation was provided for the following hypotheses.

Hypothesis 1.2: If task ambiguity is excessive, then the Intern will seek more information.

Hypothesis 2.1: If supervisor monitoring, then increased probability of task congruence.

Hypothesis 2.2: If no supervisor monitoring, then decreased probability of task congruence.

Task risk remained the most illusive concept throughout the study. While it is not difficult to conceptualize task risk in terms of task ambiguity, task difficulty and task consequences, the
operationallzation of the concept presented a major problem. However, while it would be tempting to eliminate this concept from the theory and deal directly with the relationship between its determinants (e.g., task ambiguity) and intern behaviors such as seeking more information, the resultant theory would be oversimplistic. By failing to address the complex phenomenon of task risk, the theory would reduce its potential to explain intern behavior. To this end, task risk remained in the theory with full recognition of its current operational shortcomings.

Because the task theory of student teaching is an example of the causal-process form of theory (Reynolds, 1971), the fact that all hypotheses were not confirmed does not invalidate the theory. The process of refining and modifying the task theory which was reported above resulted in a more parsimonious expression of the theory. In addition, the modified task theory is more consistent with the empirical findings.

As Zetterberg (1963) pointed out, a theory can be used to locate the most productive and manageable propositions for future testing, and the propositions which follow the modified task model (Figure 22) represent such possibilities for future testing. At a more general level, recommendations for future research are outlined in the next chapter.

The modified task model of student teaching is shown on the next page. (Figure 22)
Figure 22: Modified Task Model of Student Teaching
Stated in propositional form the following is an interpretative sequence for the relationship displayed in the modified task model of student teaching shown above.

Beginning with task specification:
- If task ambiguity then task risk.
- If task difficulty then task risk.
- If task risk is optimal then task performance.
- If task risk is excessively low then task avoidance.
- If task risk is excessively high then the Intern will either seek more information or will attempt to negotiate task demands down.
- If attempt to negotiate down is unsuccessful then either task avoidance or task performance.
- If negotiation down is unsuccessful then probability of task congruence is reduced.
- If supervisor monitoring then increased probability of task congruence.
- If contrived consequences are applied then increased probability of task congruence.
- When natural consequences are more powerful than contrived consequences:
  If task specification is incongruent with established structures and the task is contingency developed, then the probability of task congruence is reduced.

PART II

The specific research questions which form the focus of the second major research goal were as follows:
- What are the characteristics of tasks in student teaching?
- What are the characteristics of accountability within student teaching?
What is the function of the supervision process within student teaching?

What follows is an attempt to answer these questions by reference to the data collected and the concepts developed in the task theory of student teaching.

The Characteristics of Tasks in Student Teaching

A useful framework to describe the characteristics of tasks in student teaching is provided by Tousignant (1982). Although the framework was used by Tousignant to characterize tasks in physical education classes, the main features seem applicable also to the student teaching context. For the purposes of this discussion, the following characteristics of tasks will be addressed: The nature of the task systems, the explicitness of information about tasks, the relative importance of tasks and the level of challenge of tasks.

The nature of task systems

Within the literature relating to tasks, two overlapping task systems have been identified (Doyle, 1981a, Tousignant, 1982; Alexander, 1982). Task systems are simply groups of tasks related to a particular aspect of content within a lesson, and the two identified systems were termed Instructional and managerial. Instructional tasks, which together formed the instructional task system were defined by Tousignant (1982) as "skills or knowledge to be acquired as a result of a learning experience", and managerial
tasks comprising the managerial task system were defined as "non-academic tasks to be accomplished to organize and direct individual behavior and social interaction" (p. 8).

Inspection of the tasks involved in student teaching did not reveal a useful correspondence with these two task systems and the following categories of task systems provided a more appropriate classification:

(1) **The Teaching tasks system** was comprised of teaching tasks which related specifically to situations in which the intern had direct contact with pupils for the purpose of facilitating pupil involvement in the subject matter of physical education - namely motor activity. Tousignant's (1982) Instructional and management task systems would be subsumed in the teaching task system. These teaching tasks were of two main types. First, there was the task of the lesson itself - called the macrolesson task, and second there were microlesson tasks which together comprised the teaching behaviors for a single or a number of lessons. This notion of macrolesson and microlesson tasks as a level of analysis is analogous to the macrotask and microtask classification of student teaching as discussed earlier in this chapter.

Inspection of Appendix E will show that there was a variety of macrolesson tasks including teaching swimming, handball, track and field, etc., and a variety of microlesson tasks including such teaching behaviors as using positive behavior interactions, using student names, teacher demonstration and behaviors to
reduce management time. Teaching tasks was the most frequently encountered task type within the student teaching experience of Mark.

(2) The \textit{Organizational tasks system} was comprised of organizational tasks preparing for teaching. They included planning tasks which specifically related to planning units or lessons in various degrees of detail. They also included the tasks of physically setting up the gymnasium or playing field with equipment, drawing lines, or anything else done "off paper" to prepare for teaching. The purchase of equipment (e.g., Mark buying awards for the good behavior box) or the construction of equipment (e.g., Mark building a pole vault box) were tasks also of an organizational nature.

(3) The \textit{Social tasks system} was comprised of social tasks which in some way functioned to create and maintain cordial relations between the Intern and the cooperating teacher or university supervisor in particular, but also with such people as the school principal, school janitor, or other school teachers. These tasks are often overlapping with organizational tasks in particular and in this case study included, for example, Mark's cleaning out the sports storeroom, playing basketball with Mr. Blackwell during breaks between lessons, and behaving appropriately during post-lesson conferences. The significance of social tasks within student teaching is discussed later in this chapter in relation to the relative importance of tasks.
The explicitness of information about tasks

This characteristic of tasks in student teaching concerns the degree of completeness of task specification. As outlined in the discussion of hypothesis 1.1, for a task to be fully specified information concerning situation, performance, and criteria must be communicated to the Intern. In Tousignant's (1982) description of task characteristics she referred to implicit tasks, generally explicit tasks, and specifically explicit tasks. These three categories have applicability for this discussion however the terms have been modified slightly to implicit tasks, partially explicit tasks, and fully explicit tasks.

Implicit tasks were those in which only the performance and possibly the situation were specified but then only in the most general manner. For example when Mark was assisting with the swimming lessons, Mr. Storey told him to referee a game of water polo. Obviously the pool was the situation, the performance was to referee, but how was Mark to know what was specifically necessary to successfully complete that task? Similarly, at Morningstar School, Mark was told to referee a game of touch football. Details of what criteria would make a successful performance were again implicit - it was assumed by Mr. Blackwell that Mark would know. Thus such tasks in which there was an assumption that details need no explanations were implicit tasks and within this case study included, in particular, a number of refereeing tasks. It seemed that cooperating teachers certainly expect student teachers to "come equipped" with such subject matter knowledge. When Mark was told to "supervise the
lockers" and "watch the showers" during swimming classes this was another example of implicit tasks, for again no detail was given as to what constitutes a successful performance. It seemed, however, that Mark needed no specific details "spelled out" as he possessed a tacit knowledge of what constituted appropriate supervision, probably from his own years as a school pupil. That is, he had seen other teachers do it in the past.

Partially explicit tasks were those in which both situation and performance were communicated explicitly by either verbal, written or demonstration form, but where no details were given concerning criteria for successful performance. Unlike implicit tasks, partially explicit tasks contain adequate detail of situation and performance. However, like the implicit task, there is either an assumption that the criterion is tacitly understood or a simple omission of criteria information in the task description. For example, when Mark was given the task of "picking up awards for the 'Good Behavior Box' from the 'Yankee Trader'" there was sufficient detail about the situation and performance but nothing communicated about criterion for successful performance. Another example of a partially explicit task was the modeling demonstration for shot put and discus technique given by Mr. Storey. It was suggested by Mr. Storey that Mark should teach the skills with the technique demonstrated by himself. The demonstration to be modeled communicated the situation and performance but failed to provide information concerning criteria.
Fully explicit tasks were those in which details of situation, performance and criterion were explicitly communicated to the intern. Two specific examples will reveal the nature of two types of fully explicit tasks. First, a task such as "observe one art class for 30 minutes" is in the broad sense a fully explicit task. The situation is the art room, the performance is observation, and the criterion is one class for 30 minutes. However, although situation, performance and criterion are explicit there is no detail concerning the nature and focus of the observation. To successfully complete the task Mark merely had to observe the one art class for 30 minutes. No doubt Mr. Storey expected the task (and others like it) to contribute to Mark's understanding or knowledge of the school, but sufficient detail was not provided to ensure that what Mark observed was what Mr. Storey had in mind when he set the task.

At a more specific level, a task such as "reduce management time to less than 10 percent of lesson time" is fully explicit in that it communicates what the intern needs to do to successfully satisfy supervisor expectations. The situation is the physical education class period, the performance is to reduce management time and the criterion is to less than 10 percent. Presumably the specific strategies the intern employs to reduce management time is not of importance within this task, but only the fact that it is reduced. Within the student teaching experience investigated for this study, a majority of the tasks were of the partially explicit type, although for some tasks the specifications tended to evolve to the fully explicit type rather than be communicated in full detail at the
outset. For example, the task of using positive behavior interactions and the task of using pupil names both underwent a period of negotiation in which the criteria were worked out.

The relative importance of tasks

Tousignant (1982) used the criterion that if a task was seen to occur on three or more occasions it was a "major task" and if only one or two times it was a "minor task". However, as Tousignant herself admitted "...simple reference to the time spent by a class on the practice of a particular task is a crude criterion to judge the 'importance' of a task..." (p. 96), and for the purpose of discussing task importance within this study, time spent on the task was but one consideration.

When the number of task incidents is considered, it is readily apparent that the teaching tasks are the most dominant group, followed by organizational tasks and then social tasks. However, it would be premature to jump to the conclusion that therefore such a distribution automatically meant that teaching tasks were necessarily most important. Perhaps "important to whom?" is an important question for it may well be that the tasks which the Intern considers most important are not the same tasks considered most necessary by the cooperating teacher or university supervisor.

Doyle (1977) in his study of student teachers learning the classroom environment concluded that for the Intern reducing classroom complexity was a major preoccupation and that specific strategies were learned and applied which were aimed specifically at reducing
the complexity. Most of these strategies could be classified as teaching tasks and the present research study, although tentative, tends to support the importance of this focus for the Intern. The following example reflects the concern with complexity: Mark was asked why he did not use task cards for the five star activities as suggested by Dr. Austin:

Mark: "I thought about it - I thought that for those kids, with the cards we already had I thought that was starting to get too much."

"I don't really like doing or trying new things - maybe it's just because I'm starting off now and I'm doing my student teaching. I'm kind of fresh at it and I like to be organized and like everything to go smooth. If we start trying new things then things kind of get turmouled and a little bit disorganized. I am modeling Mr. Storey and not trying all that new stuff."

Another important concern for the Intern which had subsequent impact on the perceived importance of tasks was the gaining and maintaining of the approval of the cooperating teacher and the university supervisor. Mark fully realized the importance of obtaining a good recommendation for employment purposes and also that gaining and maintaining approval was essential to that end. Approval, however, seemed to be a rather complex phenomenon and was affected by numerous things. For example, doing what was asked (e.g., cleaning out the store room) seemed important, but so did showing initiative. The incident of Mark making the pole vault box
was certainly a display of initiative which gained approval from Mr. Storey. At the final conference with Dr. Austin, Mr. Storey made specific reference to the pole vault box and Mark's general initiative.

Mr. Storey: "...you get a lot who just do what they have to do to get by but Mark always impressed me because he was ready to do a little extra like build the box for the pole vault. He didn't have to do that - it wasn't even part of his lesson, he did it for little Kyle Brown in the fourth grade. He came up with some things for the bike rodeo when it would have been very easy for him to pull some equipment out but he made a ramp and a balance beam - those little extra things I think make a good student teacher" (8 June).

At Morningstar School, it seemed that Mark's ability to shoot baskets with Mr. Blackwell at break time was an important part of maintaining approval.

Also, Mark's behavior in conferences with the cooperating teacher and university supervisor was important in relation to approval. During the social task of attending conferences, Mark displayed an interested, receptive, non-defensive manner which was recognized by Dr. Austin as "a mature attitude". During conferences Mark always wrote down suggestions made by Mr. Storey or Dr. Austin and generally attempted to implement suggestions the very next lesson. Certainly, the interpersonal interactions within the conferences tended to create and reinforce approval of Mark by both Mr. Storey and Dr.
Austin. The following comments relating to the recommendation for Mark reveal the notion of approval.

Mr. Storey: "His personality has a lot to do with it - he's a very likeable kid...when suggestions are made he writes them down and works on them - you don't get many kids who do that." (3 June)

On occasions there may have been some tension between the desire of Mark to reduce complexity and to seek and maintain approval. As shown earlier, Mark said that "I don't really like doing or trying new things" but clearly Mr. Storey was impressed by his capacity to try new things. While Mark expressed the sentiment that "I am modeling Mr. Storey and not trying all that new stuff," Mr. Storey claimed that one of the subjective things he would look for when evaluating Mark's performance over the student teaching experience was that he "...likes to try new things even though they might not work out - makes it exciting for kids - try not to always do the same things I do. A lot of students just try to emulate the supervisor because they think that's the right way..." (21 April).

Doyle (1979b) has concluded that the main task for the teacher in a classroom is to gain and maintain the cooperation of pupils in classroom activities. Student teachers, as Iannaccone (1963), Tabachnick et al. (1978) and Zimpher et al. (1980) have found, tend to "go with what works" in terms of classroom practices, and it seems reasonable to suggest that "going with what works" is really another form of gaining and maintaining pupil cooperation. In Mark's case, he specifically modeled Mr. Storey because Mr. Storey's practices
clearly worked within that school context. In fact, gaining and maintaining approval of the cooperating teacher may be closely related to gaining and maintaining pupil cooperation. If Mr. Storey uses a set of classroom practices which, as Doyle (1979b) argues, seek pupil cooperation then it seems reasonable to assume that were Mark to implement those same practices, not only would pupil cooperation be obtained but also Mr. Storey's approval would be obtained. Should this be the case, then Mr. Storey's claim that an intern under his supervision should "...try not to always do the same things I do..." needs to be interpreted with some caution. Surely if Mark had not used many of the established structures and "gone with what works" but instead had attempted new things all the time he may have had some difficulty in maintaining pupil cooperation and, as a consequence, incurred some disapproval from Mr. Storey. Clearly it is not an all or none situation. Perhaps what was really expected of Mark by Mr. Storey was the maintenance of pupil cooperation and some display of initiative on and above that fundamental task.

This delicate relationship between gaining and maintaining cooperation and using initiative may help to explain why researchers such as Zimpher et al. (1980) have repeatedly claimed that supervisors have little success in encouraging creative or experimental teaching in their student teachers.

The level of challenge of tasks

Tousignant (1982) used the Csikszentmihalyi (1975) model of flow state to discuss task challenge. In essence the model operates on
the assumption that when a task is too challenging for a person's capabilities he/she will experience worry or anxiety. Conversely if the task is not challenging boredom results. This notion of challenge is conveniently accommodated by the concepts of task difficulty and task risk discussed earlier. By considering challenge within the framework of the task theory a more informative account is possible.

In terms of difficulty of tasks assigned to Mark there appeared to some difference of opinion between Dr. Austin and Mr. Storey. When asked about the difficulty of the macrotask of student teaching for Mark, Mr. Storey stated:

"I think it's hard. He's working with three or four different people and everyone wants something different. He's got to please four different people plus he's got 200 kids. So he's like an air traffic controller. Kids want fun things to do - teachers want consistency in the program." (3 June)

(Shades again of the cooperation/approval dilemma.) Dr. Austin on the other hand thought that overall the macrotask was easy for Mark.

"...he just didn't have to worry about any major discipline problems. I would say it was an easy environment for achieving the very minimum requirements we have for a student teacher."

However, Dr. Austin then added:

"...the five star program presented some difficult problems for a student teacher and many others would have floundered in that situation. Teaching the same handball lesson to four different classes on the same day for three weeks is pretty easy - I think
that instructionally it was too easy. The established structure which Mr. Storey has got made physical education a sought after activity - the clients were very receptive." (8 June)

Closer examination of these two opinions reveals however that Dr. Austin and Mr. Storey were essentially referring to different task systems within student teaching. Dr. Austin was chiefly commenting upon the teaching task system whereas Mr. Storey's comments related mainly to the social task system.

To return briefly to the model (Figure 19) representing the factors influencing task difficulty, Dr. Austin's comments clearly indicate that the Highview setting was, in his opinion, easy. Both Mr. Storey and Dr. Austin agreed that Mark possessed above average ability as a student teacher and their respective expectations of him were context appropriate and not excessive. A similar situation was evident at Morningstar. In both settings, given low task difficulty the subsequent influence on task risk was considered to be low.

It is interesting to speculate as to the affect of low task difficulty on intern boredom. The tacit learning associated with teaching nine repeat classes the same task (which is essentially low in difficulty) may be an important lesson in the day to day realities of teaching. Perhaps Mark was being socialized to expect some boredom as a natural part of the teaching role.

Accountability Within Student Teaching

Accountability, according to Skinner (1974) exists when one person is "keeping an account of the behavior of another to see
whether it meets specifications" (p. 84). Within the context of this discussion the focus of concern is with the behavior of the Intern and the specifications are those stated by the cooperating teachers and/or university supervisor. Specifically, then, a discussion of the accountability systems within student teaching must consider what specifications are made and by whom and what account is kept and by whom. However, as Alexander (1982) points out, accountability should also entail the consequences which follow a performance, and to this end a further consideration, namely: what are the consequences and by whom were they applied?, also should be part of this dimension.

Again it was useful to turn to Tousignant's (1982) research in which a framework for the relevant questions to ask concerning accountability was presented. The following specific questions will provide the framework for the discussion of accountability within student teaching: What is the type of accountability?; What is the focus of the system?; What are the procedures for recording task accomplishment?; How rigorous is the recording?; and What are the consequences?

**Types of accountability**

Tousignant (1982) classified accountability to be of two possible types: formal accountability existed when students' accomplishment of a task influenced their grades, and informal accountability existed when accomplishment of tasks did not directly affect grades. Objective formal accountability was when the contingencies used to determine the students' grades were specified and communicated to
students in advance. Within the context of student teaching, this case study revealed only one specific example of what could be called objective formal accountability. Although only a satisfactory/unsatisfactory grade discrimination was possible (finer discrimination presumably occurred within the recommendation) in student teaching, Dr. Austin distributed a list of criteria for evaluation/feedback (see Appendix B) which he described as necessary to obtain a satisfactory grade. Even with this example, there was no detail given as to how many criteria would need to be completed in order to receive a satisfactory grade.

When Mr. Storey was asked if there were any specific criteria he used to make his recommendation at the end of the term he commented:

"No there is nothing - it's all really subjective."

Similarly, when Mark was asked about the checklist which Mr. Blackwell claimed to use to evaluate his teaching performance he said he had not seen it. When asked if access to the checklist would be useful Mark said:

"Yes - that's like in introductory core peer teaching they have got certain things they evaluate you on that day and everytime I'd go in there I would go over that stuff so I would keep it in my mind - it's the same thing with evaluations if you know what you are going to be evaluated on those are the things that you are going to address. But in student teaching you probably pick that up somewhere along the line." (25 May)

Tousignant suggested that it was possible to have subjective type formal accountability where "the students learned about the required
behavior from the application of the consequences" (p. 109). In other words behaviors could be contingency-shaped by applied grade consequences. Examples of this subjective formal accountability were not found within this case study since consequences for performance were never stated in terms of grades.

Contingency shaped or developed tasks, however, were numerous within the informal accountability system. Although never formally stated, contrived feedback consequences which, in themselves were not related to grades, were frequently applied following intern behavior. Typically Mark would modify his behavior accordingly. It is probable that the cumulative affect of such contingency developed tasks actually influences the overall judgement which the cooperating teacher makes of the intern. Certainly in this case study, Mr. Storey indicated that Mark was very receptive to feedback and this was recognized as a positive feature.

The focus of the accountability system

In order to determine the focus of the accountability system it was necessary to consider the focus of the three components of accountability namely: keeping a record, comparing with specifications, and applying consequences. In terms of keeping a record, the focus was clearly on the teaching task system. All forms of coding behavior were related to teaching tasks. Appendix I shows a typical coding form used by Dr. Austin to keep record of time components of Mark's lessons. The coding sheet shown in Appendix J was that used by Mr. Storey. Record of management time, activity
time, use of student names, number and type of skill feedback statements, and number and type of behavior interactions are all related to teaching tasks. Given the relative sophistication of these coding forms there was a high degree of rigor associated with the recording of teaching tasks. Mr. Storey also displayed the behavior record in graphical form as shown in Appendices F, G, and H. At such times when observation monitoring was not possible, Mr. Storey had Mark use a hand held counter to record his own behaviors; for example the number of positive behavior interactions. At Morningstar Middle School, however, there was no systematic or rigorous recording of teaching tasks by Mr. Blackwell. The only record of teaching behavior at Morningstar was that done by Dr. Austin during his supervisory visits.

Although the focus of record keeping was predominantly on teaching tasks, organizational tasks also were recorded, albeit in a less rigorous and systematic manner. Typically, the record was made by a simple verbal question as to whether or not a task was or was not completed. For example, when Mark was instructed to observe art, music and homeroom lessons, Mr. Storey simply asked him whether he had completed the task. Presumably Mr. Storey kept a mental record of responses to such questions. There was no evidence that such tasks were "checked off" as they were completed.

In terms of comparing with specifications (a necessary process for determining the degree of task congruence), although mental comparisons may have been made by cooperating teacher or university supervisor, the absence of observable behavior rendered such an
Interpretation problematic. By searching only for examples of written or verbal comparison it was found that again the focus tended to be on the teaching task system. It stands to reason that if a task is explicitly specified and a permanent record of behavior is obtained then comparison of performance to specifications is a relatively simple process. If, however, as in the case of many organizational tasks, no record was made of performance then subsequent comparison with specifications is a memory task and certainly susceptible to error.

Less than half of the tasks in the teaching task system and the organizational task system were specified in a fully explicit form and, where permanent records were made of performance (for example details of time dimensions of lessons) comparisons tended to be made. For example, it was specified that management time should be reduced to 10 percent or less of total lesson time, and following coding of lesson time, Mr. Storey recorded the task performance and then compared it with the specifications. The process of such comparison was the basis for contrived feedback consequences applied by Mr. Storey.

Interestingly, it was not always the case that comparisons were made with explicit specifications. The application of contrived feedback consequences was not the result of comparison with explicit specifications. Typically, the cooperating teacher or university supervisor would monitor certain teaching behaviors and then offer feedback (positive or negative consequences) based upon whether or not the observed behavior was congruent with their tacit
understanding of acceptable performance for the observed task. For example, although the limitation of working area was not originally specified as a teaching task, Dr. Austin, following observation of a lesson at Morningstar told Mark during the post lesson conference (see Appendix K) that he should restrict the working area in future soccer lessons. This application of feedback consequences did set a new teaching task for Mark, however, the feedback was the result of the comparison of observed behavior by Dr. Austin with some implicit notion of what was acceptable class spacing.

The application of consequences, as a component of accountability, is probably the most obvious. For this dissertation, as shown in the task theory, there are two types of applied consequences (natural consequences are always present and within this context they are not "applied" - at least by the cooperating teacher or university supervisor). First, the dominant form of consequence within this case study was contrived feedback consequences and such consequences were most often associated with the teaching task system. An inspection of one post-lesson conference (see Appendix K) reveals a number of examples of the typical focus of such consequences. Below is a summary of the main points within the conference.

- Good first ten minutes of lesson.
- Good observation of class during warm-up.
- Good reaction to previous feedback.
- Class took six minutes to change and be ready and the self set goal is four minutes.
Not all class could see demonstration.

Lesson "fell apart" when class spread out across all the playing field.

Show lesson plans.

Can be briefer with lesson plans.

It is clear that the teaching tasks system is the dominant focus with some consequence also given to organizational tasks such as lesson planning.

The second form of applied consequences were those which were specified in advance of performance and termed arranged contrived consequences. With the exception of one instance (Dr. Austin's statement of the relationships between the criteria for evaluation/feedback and the grades of satisfactory and unsatisfactory) there were no examples of arranged contrived consequences throughout the student teaching term. Consequences for performance were not pre-specified and as such there was no dominant focus of this component of the accountability system.

Consequence of Mark's performance of the social tasks within student teaching was of a very obtuse nature. There were no arranged consequences and no explicit feedback consequences such as a comment to Mark about how well he interacted with the conference setting. In fact, social tasks like behavior within post lesson conferences tended to be consequated by natural consequences. Appropriate behavior at such social tasks tended to create favorable attitudes or dispositions in the cooperating teachers or university supervisor and may have had deferred significance later in the term when evaluations
were being made. When judgements of a person's competence are made in the absence of specific recorded information and subsequent comparison with task specifications, it would seem that interpersonal interactions would become extremely important. As Mr. Storey said, the evaluation he made of Mark was purely subjective (even though he did have a good deal of objective information regarding Mark's performance during the term) and it seems reasonable to suggest that Mark's performance on the social tasks was influential in that subjective judgement. People would tend to judge those whom they like more favorably than those whom they dislike.

**The functions of supervisor monitoring in the accountability system**

As outlined in the task theory, supervisor monitoring is a necessary condition for the application of contrived consequences following intern performance, however by definition, monitoring does not necessarily include applying consequences. Monitoring by the cooperating teacher varied greatly across the two settings. As mentioned previously Mr. Storey, especially in the first five weeks of the term, frequently monitored by means of collecting data about Mark's teaching and compared it with specifications or used it to set specifications. Typically he would observe and record for 20 minutes of a lesson and then spend the remaining lesson time preparing the data collected for discussion at the post-lesson conference. When not collecting data, Mr. Storey typically monitored at least part of each lesson by simply observing. The link between Mr. Storey's monitoring behavior and the accountability system was strong. On
occasions when monitoring consisted of data gathering and congruency analysis, the congruity judgement was communicated to Mark in the form of contrived consequences. Even when monitoring consisted of observation only, typically it was followed by some form of feedback. Although monitoring, by definition, did not necessarily include applying consequences, for Mr. Storey, feedback tended to reliably follow monitoring.

At Morningstar, however, at no time throughout the term was Mark's teaching monitored by Mr. Blackwell by means of data collection. The only form of monitoring which Mr. Blackwell used was brief (maximum of five minutes) observation of Mark teaching. Mr. Blackwell claimed that he liked to keep a low profile.

"I want the kids to know I'm not around so they will feel free to do whatever they are going to do good or bad. I will usually be close enough for the first couple of times to evaluate it from a distance - come in and watch a couple of times - then if I'm happy with it I'll stay away and just periodically check with them." (15 April)

When Mark was asked whether he received enough feedback about his teaching from Mr. Blackwell, he remarked: "No not really - he does give me some but maybe I'm spoiled with Mr. Storey. I think he could probably talk a little bit more in relation to teaching" (25 May). However, such feedback would require more observation and preferably also some form of recording of teaching performance and both were not part of the supervisory role adopted at Morningstar.
Dr. Austin monitored Mark in both settings throughout the term. Typically, monitoring consisted of observation and recording. Recording Mark's teaching behavior was done on the recording sheet shown in Appendix I. In general a comparison of recorded data with task specifications was made and the congruity discussed as feedback at the post-lesson conference. The criteria for evaluation/feedback (Appendix B) formed the basis for the focus of recording Mark's performance. The following discussion with Mark reveals something of his reaction to the supervision by Dr. Austin throughout the term.

Researcher: "How much does Dr. Austin affect your teaching?"

Mark: "I would say that by the time a person gets to be a senior they have pretty well developed their style of teaching. I think that Dr. Austin will bring out little points that can better me as a teacher but generally by student teaching you have either got it or you haven't and I don't think you will make a real big change."

Researcher: "How much is the grade/recommendation you receive at the end in your mind when you go about preparing to teach? Are you conscious that the outcome might be Important to you?"

Mark: "Oh sure!...Maybe the days you know Dr. Austin is going to come out you probably plan a little bit better so that you know that at the end you're probably going to get a good recommendation."
Researcher: "What would happen if management time was increasing rather than decreasing? How would you feel about that in relation to your recommendation — would it worry you in terms of that?"

Mark: "Yes it probably would worry me. It would be a factor. I'm sure I'd be thinking well that's a major factor in teaching — that you have the least amount of management time as possible — so that would be important because on my recommendation he might say that 'management time wasn't that good, that's one thing that Mark needs to work on.'" (29 April)

Supervisor monitoring was therefore a fundamental part of the accountability system. The application of contrived consequences was dependent upon some form of monitoring and at Highview in particular, frequent monitoring was seen to be an important supervisory function. Most of Mark's changes in teaching behavior at Highview could be traced directly to the application of contrived feedback consequences within the post-lesson conference and the substance of such feedback invariably was obtained from monitoring. At Morningstar on the other hand, with the exception of monitoring from Dr. Austin and the subsequent application of consequences, Mark's teaching behavior tended to be consequated almost entirely by the natural consequences of the gymnasium ecology.

It is important to realize, however, that the contingencies operating in student teaching are such that for the supervisor and the cooperating teacher there are few, if any, institutional rewards
for adopting frequent monitoring and feedback practices. Just as Tousignant (1982) found that the consequences for bothering to use a formal accountability system for student skill acquisition tended to be aversive and certainly not encouraged by the school administration or parents, so it is within student teaching. As long as there is some observation of the intern and the fulfillment of an evaluation role, the frequency of monitoring and the nature of the feedback given to the intern are of little institutional concern. There was, for example, no expectation of, or recognition for, the fact that Dr. Austin made fourteen visits to see Mark teach over the ten week term. He could "have got away with" only three such visits. The finding by Zimpher et al. (1980) that "supervisors usually get just what they ask for from student teachers and not much more", would seem equally applicable to training institutions and supervisors.
"...a primary thrust of theory in educational research is to seek mechanisms or processes that answer the question of why a given aspect of education works the way it does" (Suppes, 1974, p. 5).

Within educational research there has been considerable research effort expended to attempt to explain the way student teaching works and why it works the way it does. For all this effort however, there has been relatively little systematic theorizing. The theory of supervision in teacher education by Dussault (1970) is a notable exception.

The purpose of this study was to develop and test a task theory of student teaching using the concepts of task originally articulated by Walter Doyle (1977-1979) and the notion of accountability which formed a basis of Alexander's (1982) research. Although Doyle's concepts had provided a powerful explanation of how teaching effects occur in classrooms and gymnasium (e.g., Carter, 1980 and Tousignant, 1982) there had been no application of the concepts to the field of student teaching. It was considered by the researcher that Doyle's concepts of task, and the notion of accountability, would provide a useful heuristic for attempting to explain the student teaching
process. Two major research goals provided the structure for the investigation. The first goal was to develop and test the task theory of student teaching. The second goal was to address the general "what is out there?" question mentioned by Fuller and Bown (1975) but specifically focused on what is out there in terms of tasks and accountability.

This chapter provides a summary of the study and outlines the conclusions and recommendations which were drawn from the study.

**Summary of the Study**

In the first part of the study the research and epistemological framework within which the theory was to be developed were outlined. The review of literature (Chapter II) was limited to contemporary empirical studies which focused in some way on the learning to teach function of student teaching. In particular, three groups of research studies were reviewed. First were a number of studies which investigated the socialization influences on learning to teach. Second were studies which investigated the ecological influences on learning to teach, and third were those studies which related specifically to experimental efforts to change intern teaching behaviors.

In order to locate the developing theory within theory development in general, and educational theory in particular, the meaning of theory, the functions of theory, the types of theory, and the construction of theories were reviewed and discussed in Chapter III.
The development of the task theory in Chapter IV was preceded by a detailed outline of Doyle's concepts of task and the notion of accountability. In essence, the theory considered of a number of concepts of task and accountability stated in relational form and a number of derived propositions. The relationships among the concepts were outlined in written propositional form and also in diagramatic form. The diagramatic form was presented as a task model of student teaching (see Figure 16).

The second part of the study involved the provisional testing and modification of the task theory. Chapter V provided an account of the methodological issues relevant to selecting naturalistic research methods to test the theory and Chapter VI outlined the procedures used in data collection and analysis. Data were collected by means of participant observation, interview and document analysis. The student teaching experience of one intern provided the case study on which the theory testing and modification was based. Propositional statements from the task theory were used as the working hypotheses for the theory testing and modification.

Conclusions

Five general research questions were identified as important with respect to satisfying the two research goals. What follows are the major conclusions which relate to each research question and some general conclusions relating to task theory.
1. To what extent were the working hypotheses supported or refuted by the data?

The original version of the task theory consisted of five existence statements which gave rise to twenty three working hypotheses. Very early in the field work phase of the study (after two weeks) it was realized that in the interests of parsimony alone there were too many hypotheses. More importantly however, the theory seemed to lack conceptual simplicity and, in order to facilitate a more useful theory with respect to empirical testing, the initial task theory was modified within the structure of a contingency management of tasks model as articulated by Alexander (1982).

Following this initial modification, the revised theory included a more parsimonious set of twelve working hypotheses. It was these hypotheses which formed the basis of the theory testing which continued throughout the study.

Hypothesis 1.1: If incomplete task specification, then task ambiguity.

Hypothesis 1.2: If task ambiguity is excessive, then intern will seek more information.

Hypothesis 1.3: If task ambiguity, then task risk.

Hypothesis 1.4: If task difficulty, then task risk.

Hypothesis 1.5: If task risk is excessive, then the intern will attempt to negotiate the task demands downward.

Hypothesis 1.6: If task risk is not excessive, then task performance.

Hypothesis 1.7: If negotiation downward is successful, then the probability of task congruence is reduced.
Hypothesis 2.1: If supervisor monitoring, then increased probability of task congruence.

Hypothesis 2.2: If no supervisor monitoring, then decreased probability of task congruence.

Hypothesis 2.3: If contrived consequences are applied, then increased probability of task congruence.

Hypothesis 2.4: If contrived consequences are not applied, then decreased probability of task congruence.

Hypothesis 3.1: When natural consequences are more powerful than contrived consequences: If task is contingently developed, then the probability of task congruence is decreased.

2. Were modifications to the theory necessary as a result of testing, and if so, what was the nature of the modifications?

As the collected data were matched with each working hypothesis the theory was modified in the following ways:

Hypothesis 1.1: If Incomplete task specifications, then task ambiguity.

Replaced by: A task which is communicated with Incomplete task specifications is an ambiguous task.

Insufficient evidence was available to disconfirm or confirm the following hypotheses and as such they remain problematic.

Hypothesis 1.3: If task ambiguity, then task risk.

Hypothesis 1.4: If task difficulty, then task risk.

Hypothesis 1.7: If negotiation downward is successful, then the probability of task congruence is reduced.

Hypothesis 2.3: If contrived consequences are applied, then increased probability of task congruence.
Hypothesis 2.4: If contrived consequences are not applied, then decreased probability of task congruence.

The following hypotheses were modified in the light of the data:

Hypothesis 1.5: If task risk is excessive, then the Intern will attempt to negotiate the task demands downward.
Modified to: If task risk is excessive, then the Intern will either seek more information or attempt to negotiate the task demands downward.

Hypothesis 1.6: If task risk is not excessive, then task performance.
Modified to: If task risk is excessively low, then the Intern will attempt to avoid the task.
If task risk is optimal, then task performance.

Hypothesis 3.1: When natural consequences are more powerful than contrived consequences:
If task is contingently developed, then the probability of task congruence is decreased.
Modified to: When natural consequences are more powerful than contrived consequences:
If task specification is incongruent with established structures and the task is contingently developed, then the probability of task congruence will be decreased.

Provisional tentative confirmation was provided for the following hypotheses.

Hypothesis 1.2: If task ambiguity is excessive, then the Intern will seek more Information.

Hypothesis 2.1: If supervisor monitoring, then increased probability of task congruence.

Hypothesis 2.2: If no supervisor monitoring, then decreased probability of task congruence.

The final modified version of the task model of student teaching reflects the above modifications.
Figure 22: Modified Task Model of Student Teaching
3. What are the characteristics of tasks in student teaching?

Three major task systems were identified within student teaching. The teaching task system consisted of tasks in which the Intern had direct contact with pupils in order to facilitate pupil learning of motor activities. The organizational task system consisted of tasks which related to the preparation for teaching, such as lesson planning or arranging gymnasium equipment. The social task system included tasks which were associated with creating and maintaining cordial interpersonal relations between the Intern and others.

A majority of task specifications were partially explicit in that they contained information about the task situation and performance but did not include details of criteria necessary for successful performance. Many tasks, however, were fully explicit and also a number of tasks which were initially communicated as partially explicit eventually became fully explicit as the criterion details were negotiated. Implicit tasks tended to be those which related to skills and knowledge of which the cooperating teachers assumed the Intern had an understanding by virtue of his background in sport.

In terms of the relative importance of tasks within student teaching, there were two apparent emphases. First, for teaching tasks the importance was not so much fulfilling supervisor expectations as it was reducing the complexity of the gymnasium. Certain teaching tasks, often those used by the cooperating teacher, were significant in reducing complexity and they were the focus of Intern attention. Second, the social tasks of gaining and
maintaining the cooperation of the cooperating teacher, the university supervisor, and the class pupils, were significant for the intern. The fact that such social tasks may conflict with expectations to try new things was seen to be important in explaining why so little creativity is characteristic of most student teaching.

In making a judgement about the level of challenge of the macrotask of student teaching it was necessary to identify the relative challenge of the task systems. A student teaching experience may be easy in terms of the demands of the teaching and organizational tasks yet difficult in terms of the social tasks it demands. The macrotask of student teaching which was the focus of this study was claimed to be easy by the supervisor (referring to the teaching tasks) and difficult by the cooperating teacher (in terms of the social tasks).

4. What are the characteristics of accountability within student teaching?

Because the grade or recommendation was such a deferred consequence within the student teaching experience (it was not awarded until after the completion of the eleven weeks), the major type of accountability was informal accountability. Although perhaps cumulatively related to grades or recommendation, most task accomplishment did not directly affect the intern's grade or recommendation.
The final recommendation from the cooperating teacher was a form of subjective formal accountability for it was not based upon pre-specified criteria and the degree of congruence between task specifications and task performance, but rather on the subjective judgement of the cooperating teacher. The award of a satisfactory or unsatisfactory grade by the supervisor was the only example of objective formal accountability in which the contingencies used to determine the Intern's grade were specified and communicated in advance.

Contingency developed tasks which were the result of contrived feedback consequences applied by the cooperating teacher or university supervisor were numerous within the informal accountability system. The Intern's teaching behavior was most often modified subsequent to the verbal or graphic feedback given by the cooperating teacher or university supervisor.

The focus of the accountability system was associated with the teaching task system. When records were made of certain Intern task performances typically they were of teaching tasks. When comparison of task performance was made with task specification it tended to be focused on teaching tasks, if for no other reason than the fact that records of task performance tended to be of teaching tasks. In many instances, comparison of task performance was made with tacit task criteria which were known by the cooperating teacher or university supervisor but not communicated to the Intern until after task performance.
By far the most typical form of task consequence was contrived feedback consequences in which the cooperating teacher or university supervisor gave feedback to the intern. The teaching task system was the dominant focus of such consequence. The application of consequences stated in advance (applied contrived consequences) was evident on only one occasion.

Social tasks tended not to be specified at all (explicitly) and were consequated only in the obscure form of cooperating teacher or university supervisor approval (typically non-verbal) and displays of favorable attitude toward the intern.

5. What is the function of supervisor monitoring within student teaching?

Monitoring varied greatly across the two settings in which the intern taught. In one setting there was very little monitoring from the cooperating teacher. In the other setting the cooperating teacher monitored almost every lesson taught by the intern. Monitoring by the university supervisor was consistent across settings.

Although, by definition, monitoring did not necessarily include the application of consequences, on most occasions it was followed by some form of feedback. Typically, monitoring took the form of observation and recording data about the intern's teaching task performances. Also typically, the resultant task congruity analysis was discussed with the intern at the post-lesson conference. Most of
the changes in the intern's teaching behavior could be traced to previous feedback given by the cooperating teacher or university supervisor. Thus, as an essential part of the accountability system, monitoring played a key role in the student teaching experience.

**The potential of the task theory of student teaching**

The task theory is still very much an embryonic form. As outlined above, while empirical support was found for some of the propositions (working hypotheses), a number were left problematic due to lack of sufficient evidence to confirm or disconfirm. If one is of the opinion that theory testing should continue until all propositions have been empirically found to have "law like" status then clearly the task theory requires considerable development. Certainly within this study the task theory provided a useful tool for directing the empirical investigation. As Suppes (1974) has argued, bare empiricism is, in and of itself, trivial and without theory, "these bare facts duly recorded lead nowhere ... they do not provide methods of prediction or analysis" (p. 6). It is within this perspective that the task theory seems to have potential. By articulating the relationship among concepts the theory provides a framework for the explanation of observed phenomenon.

This researcher however, does not claim that accurate prediction of an intern's behavior will be necessarily forthcoming through further refinement of the task theory. Such predictions would, it is felt, be improved but not infallible. Prediction would remain probabilistic but the probability should increase as the theory gains
empirical support. There is a trade-off between the desire for parsimony in a theory and the ability of a theory to deal with complex phenomenon.

The task theory, grounded as it is in the conceptual and empirical work of Doyle, Alexander, Tousignant and Skinner, offers a level of prediction and explanation of student teacher behavior which has to date, not been possible. Further refinement of the task theory should improve its predictive function.

One of the functions of theory, according to Zetterberg (1963) is to locate the most productive and manageable propositions for future empirical testing. The task theory has potential to fulfill this function as shown below.

Recommendations for Future Research

Given that this study was the first of its kind to apply the Doyle concepts of task and the notion of accountability to the student teaching process, it would seem that further research using these concepts would be worthwhile. In particular, there are two initial research studies which are worthy of attention following a review of the findings of the task theory development and testing.

First, it would be useful to conduct a similar study to seek evidence to test the hypotheses involving task risk which remained problematic and those which were modified. As mentioned in Chapter VII the finite length of time of one student teaching experience was insufficient to gather sufficient data on many hypotheses. An extended study, perhaps over a period of a year or more using more
than one Intern would produce a more adequate data base from which to
test the hypotheses. An attempt to operationalize the concept of
task risk would be an essential starting point for such a study.
Only by operationalizing the concept of task risk and by testing the
hypotheses in which risk is a key concept can the contribution of
task risk to the task theory of student teaching be determined.

A second research study could focus specific attention on the
influence of the supervision process on Intern teaching behavior.
Evidence from the current study provided provisional support for the
positive affect of supervisor monitoring and this finding could be
used as an initial hypothesis for a more extensive study using more
Interns across various settings. In addition, the two hypotheses
from the present study which related specifically to the application
of contrived consequences and their subsequent affect on task
congruence, and which were found to remain problematic, could provide
additional useful working hypotheses for such a study. In essence,
such a study would, by focusing on a small but significant part of
the task theory, contribute to the validation of the total theory.

Another possible research direction could be to select a small
number of the working hypotheses from the task theory and arrange an
experimental study using applied behavior analysis strategies to test
the hypotheses.
Recommendations for Practice

While it is realized that in many cases the student teaching experience in essence becomes an exercise in the development of utilitarian teaching perspectives (Zelchner, 1980) and not a time for the analysis of teaching, such a statement of current practice does not mean that this is either desirable or unchangeable. Similarly, the findings relating to the power of classroom ecology in determining what teaching behaviors the intern can utilize in a given classroom (Copeland, 1978) do not suggest that student teaching is doomed to offer only a capricious contribution to the development of competent teachers. Indeed, the task theory of student teaching in its embryonic form has, within this study, provided framework which enabled a number of these practices to be investigated. Although tentative, the results of this study suggest a number of practices which would seem to have potential for improving the effectiveness of student teaching.

First, if the main function of the student teaching experience is considered to be essentially evaluative (that is to test the performance of the intern), then cooperating teachers and university supervisors should endeavor to reduce the ambiguity of all tasks they set by increasing the detail of the task specifications. By accurately defining the situation, performance and criteria of tasks, the task risk for the intern would be reduced and the potential for accurately determining task congruence enhanced. The other requirement for task congruence analysis (upon which an evaluation should be based) is an accurate record of the task performance of the
Intern, and the extended use of systematic observation and recording of task performance by the supervisor, or the Intern, or even a class pupil, would facilitate a more objective congruity analysis.

While it is understood that for practical purposes it may not be possible to specify all tasks with such detail that no ambiguity remains, if evaluation is considered of paramount importance by the supervisors then it seems only fair to the Intern that considerable effort be made to define clearly the exact nature of the tasks which will be evaluated.

Second, if student teaching is considered to serve a predominantly diagnostic function (with emphasis on assisting Interns improve their teaching, rather than testing their ability) then systematic monitoring and recording of performance again seems essential. However, records of teaching performance in this instance would be used to diagnose problems rather than to judge success or failure.

Regardless of which of the above two functions of student teaching is predominant, training institutions should endeavor to hold cooperating teachers accountable for the performance of frequent intern monitoring. Within this study Intern task performance was typically improved when the cooperating teacher monitored the performance. Making such monitoring behavior mandatory for the cooperating teacher would seem to be worthwhile. In addition, given the significance of the context on Intern performance, supervisors from the university or college should be assigned only to a limited number of schools on an extended basis so they can develop a greater
understanding of the demands and idiosyncrasies of a particular school setting. Setting tasks of appropriate difficulty level for the intern in order to avoid excessively high or low task risk would also be enhanced by greater knowledge of context.

Finally, if training institutions consider practice teaching to be an indispensable aspect of their programs they should be prepared to reward both cooperating teachers and their own supervisors for bothering to perform the supervision task with diligence.

Postscript

It was Suppes (1974) who claimed that one of the thrusts of theory was to enable us to show that what appear on the surface to be simple matters of empirical investigation, on a deeper view prove to be complex and subtle. So it was with the task theory of student teaching. What might have seemed to be a simple matter of identification of the contingencies of reinforcement within student teaching turned out to be extremely complex and subtle. Moxely (1982) has addressed this issue by claiming that specific observable behavior can best be understood in the context not only of what he called "temporary ongoing activity events" but also of "enduring setting events". Certainly, within this naturalistic study, an attempt was made to understand ongoing events in the context of enduring events within the student teaching process. However, this researcher was left with the feeling that one can merely approach an understanding of the process rather than actually obtain the definitive explanation.
To this end, recommendations for practice, for example, should be interpreted as "worthy of attention" and not as panaceas deemed to solve all the problems of student teaching. To the extent that the task theory of student teaching provides a useful contribution toward an understanding the complexities of the student teaching process then its potential for improving practice seems justifiable.
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APPENDIX A

EXPERIENCE OVERVIEW
EXPERIENCE OVERVIEW

Student Teaching
Spring 1983
Dr. Austin (Supervisor)

1. Student Responsibilities

See p. 6-7 Student teaching handbook and attached sheet.

2. Components

A. Observation: pre-observation planning
   purposeful attention during observation
   post-observation reflection
   post-observation discussion

B. Participation: teaching aide, tutoring, assisting with administrative routines, preparing teaching materials, checking student work; and other activities which assist the cooperating teachers.

C. Student Teaching: conducting learning activities for which an increasing degree of responsibility is borne.

D. Conferences:

The conference is an essential activity of student teaching. The ultimate goal of the conference is to help student teachers become self-analyzing, self-evaluative professionals. To achieve this objective, the participants must be prepared to learn from others and to contribute freely to their own ideas and perceptions.

Student Group and University Supervisor - Conferences will be held during the quarter. The amount of time needed will vary according to the topic to be discussed. These conferences will be held in 310 Pomerene Hall.

3-Way Conference - The student teacher, cooperating teacher and university supervisor will meet at the school during the quarter. The focus of these conferences will relate specifically to student teacher and cooperating teacher needs.
2-Way Conference - The student teacher will meet regularly with the cooperating teacher to discuss all aspects of the experience. These conferences will be initiated by both parties as the need arises.

The student teacher will meet with the university supervisor following the supervisor's observations. These conferences will take place at the school or by mutual arrangement at the university.

E. Planning for Teaching

Student teachers will plan in accordance with the cooperating teacher's curriculum. Planning requirements can be stipulated by the cooperating teacher. The university supervisor requires a long-range plan, that is an overview of the curriculum areas to be covered - an outline of the practice experience; detailed plans for each unit of work the student assumes total responsibility; and daily lesson plans.

Planning should involve consultation with the cooperating teacher. The university supervisor will also be available to assist in planning.

F. Evaluation

Evaluation is designed to assist student teachers in improving and progressing in their managerial instructional skills, and to help the student teacher master skills of self-evaluation and self-analysis.

The student teacher, cooperating teacher, and university supervisor will establish several mutually agreed criteria. Some suggestions are included on p. 16-17 of the student teaching handbook. The agreed upon criteria will be discussed during the 3-way conferences.

The Physical Education Department specifies other evaluative criteria. These relate to teaching skills emphasized in the three core programs undertaken by all P.E. majors. The university supervisor will communicate these criteria at the initial conference.

University supervisors (in consultations with the cooperating teacher) will complete a letter of recommendation for each student teacher they have supervised. This letter will be placed in the College of Education's Office of Career Services.
Student teacher management-related objectives:

1. Use appropriate management techniques to reduce management time.

2. Reduce the number of teacher managerial behaviors necessary to management effectively.

3. Establish and maintain an adequate rate of appropriate student behavior. (Definition of appropriate determined by student and supervisor in light of school context.

4. Teach self-management skills to students. That is, develop or utilize established structures to decrease the need for a high degree of current interaction related to classroom management.

5. Use positive behavioral interactions to accomplish management goals.

6. Cope with and remediate unexpected classroom disruptions by utilizing appropriate management strategies.

7. Use student names in behavioral interactions.

8. Demonstrate "withitness" in managerial areas.

Student teacher Instructional-related objectives:

1. Plan and teach so that participation is maximized. This should be reflected by observations based on activity and wait time data.

2. Teach from a positive style with specific reference to skill feedback and motivation related to instructional objectives.

3. Offer presentations and demonstrations that are clear, to the point, and provide appropriate (accurate) information.

4. Manage time effectively so that practice/participation time is optimized and management/instruction time are minimized given the context of the teaching.

5. Teach to reflect the characteristics of clarify, task orientation, enthusiasm, and a climate conducive to student growth on both skill and attitude.

6. Plan and ensure a safe activity environment.

7. Demonstrate "withitness" in Instructional areas.
APPENDIX C

TASK LIST FROM DR. AUSTIN
Student Teaching Tasks

Before Week One

1. Attend College of Education student teacher meeting.
2. Visit school - meet with principal and cooperating teacher.
3. Attend Conference 1 with university supervisor.
4. Prepare 3 management-related objectives which you plan to achieve in the first 2-4 weeks of the experience.
5. Receive a schedule card.
6. Familiarize yourself with "Observation-Management Focus" Key behaviors.

During Week One

1. Complete a schedule card indicating teaching times, other duties, etc. and return to supervisor.
2. Collect data on one student in an activity class using the Observation-Management Focus format. (Inform cooperating teacher of your intentions - you may wish to identify a good or poor performer to focus on.)
3. Discuss management objectives with your cooperating teacher.
4. Determine projected involvement during week 2-4.

During Week Two

All schools will be closed April 2 - April 8. We will meet in 310 Pomerene for a group conference during this week.

1. Present a 5-minute overview of the school context, the instructional context, and teaching methods employed.
2. Present a summary of data collected (Week 1) - handout or overhead.
3. Present 3 management-related objectives and details of how to achieve these.
4. Discuss perceptions of the experience to come.

5. How can we help each other - instructional materials, content experts, etc.

**During Week Three & Four**

1. Develop lesson plans for individual lessons to be taught.

2. Begin to organize/prepare unit plan.

3. Discuss management-related objectives with cooperating teacher and university supervisor.

4. Have data collected on one of my classes - peer, cooperating teacher, or university supervisor.

5. Prepare a plan/strategy to remediate problems and to maintain appropriate teacher behaviors.

6. View prospective students of one of your classes in a non-P.E. setting. (Ask your cooperating teacher to introduce you to a classroom teacher and plan to view their class - an observation schedule is available for this experience.)
APPENDIX D

TASK LIST FROM MR. STOREY
March 28 - 31

- Review Policies and Procedures
- Meet School Staff
- Observe 2 children on morning recess, what are their skill levels? What do they like to do?
- Observe 1 art class (30 min.)
- Observe 1 music class (30 min.)
- Observe 1 primary class in their homeroom
- Observe 1 intermediate class in their homeroom
- Meet the Principal (Monday 9:00 a.m.) What are her expectations for a sound physical education program?
- Call Connie Block - PTA President What are her expectations for a sound physical education program? How important are parent volunteers in the school program at Worthington Hills?
- Call Bruce Emery - Director of Elementary Instruction What does he look for in hiring an elementary physical education instructor?
- Review Graded Course of Study
- Assist with Swimming Program
- No school on Friday April 1st

April 1 - 8

- Develop a lesson plan for 25 students (4th grade) with the major focus being group problem solving, cooperation, (New Games philosophy) (teach this lesson April 11 - April 15).
- Review skill sequence for javelin, triple jump, disk, and shop put. Be able to demonstrate and explain specifics.
Call "Corp of Engineers" Delaware Dam. When do they open the gates on the dam? We are planning a canoe trip late spring!

Pick up awards for "Good Behavior Box" from Yankee Trader.
APPENDIX E

RECORD OF MAJOR TASKS
SET FOR THE STUDENT TEACHER
<table>
<thead>
<tr>
<th>Date</th>
<th>Task</th>
<th>Specification</th>
<th>Task Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 March</td>
<td>Attend meeting (OSU)</td>
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<td>S</td>
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<tr>
<td></td>
<td>Attendance at school</td>
<td></td>
<td>O</td>
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<td></td>
<td>Dress appropriately</td>
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<tr>
<td></td>
<td>Become part of school life</td>
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<td>S</td>
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<tr>
<td></td>
<td>Write lesson and unit plans</td>
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<td></td>
<td>Teaching Load. 5 lessons/day</td>
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<tr>
<td>16 March</td>
<td>Attend meeting (OSU)</td>
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<td>S</td>
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<tr>
<td></td>
<td>Fill out schedule card</td>
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<td>O</td>
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<td></td>
<td>Prepare 3 management objectives</td>
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<td>O</td>
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<tr>
<td></td>
<td>Collect observational data</td>
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<td>O</td>
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<tr>
<td></td>
<td>Prepare lesson and unit plans</td>
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<td>O</td>
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<tr>
<td></td>
<td>Use student names</td>
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<tr>
<td>27 March</td>
<td>Review Policies and procedures</td>
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<td>O/S</td>
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<td></td>
<td>Meet school staff</td>
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<td></td>
<td>Observe 2 children on morning recess</td>
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<td></td>
<td>Observe 1 art class (30 min)</td>
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<td></td>
<td>Observe 1 music class (30 min)</td>
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<td></td>
<td>Observe 1 homeroom class</td>
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<td></td>
<td>Meet Principal - ask about her expectation re physical education</td>
<td></td>
<td>S/O</td>
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<td>Call PTA president - ask about expectations re phys. ed. Also</td>
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<td></td>
<td>Review graded course of study</td>
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<td>S/O</td>
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<td></td>
<td>Assist with swimming program</td>
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<td></td>
<td>Develop lesson plan (new games)</td>
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<td>O</td>
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<td></td>
<td>Review track &amp; field skills</td>
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<td>so can demonstrate &amp; explain</td>
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<td></td>
<td>Call Corp of Engineers re Delaware dam</td>
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<td>O/S</td>
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<td></td>
<td>Pick up awards for &quot;Good Behavior Box&quot;</td>
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<td>O/S</td>
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<tr>
<td>29 March</td>
<td>Meeting with Mr. Storey</td>
<td></td>
<td>O/S</td>
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<tr>
<td></td>
<td>Observation in classroom</td>
<td></td>
<td>O</td>
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<td></td>
<td>In charge of bus to swimming</td>
<td></td>
<td>O</td>
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<tr>
<td>Date</td>
<td>Task Specification</td>
<td>Task Type</td>
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<tr>
<td>29 March</td>
<td>Assist in swimming lesson</td>
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<tr>
<td></td>
<td>Supervision of lockers</td>
<td>O</td>
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<tr>
<td>30 March</td>
<td>Assist in swimming lesson</td>
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<tr>
<td></td>
<td>Explain water polo game</td>
<td>T</td>
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<td></td>
<td>Referee water polo</td>
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<tr>
<td></td>
<td>Meeting with Mr. Storey</td>
<td>O/S</td>
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<td></td>
<td>Set up floor hockey (M)</td>
<td>O</td>
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<td>Linesmen for hockey game (M)</td>
<td>T</td>
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<tr>
<td></td>
<td>Linesmen for hockey game (M)</td>
<td>T</td>
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<tr>
<td>31 March</td>
<td>Assist with swimming lesson</td>
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<td></td>
<td>Help instruct rescue skills</td>
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<td></td>
<td>Help out with small group</td>
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<td></td>
<td>Organize &amp; referee water polo</td>
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<td>Supervision of lockers</td>
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<td></td>
<td>Organize &amp; referee water polo</td>
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<tr>
<td>5 April</td>
<td>Attend meeting (OSU)</td>
<td>O</td>
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<tr>
<td>11 April</td>
<td>Clean storeroom</td>
<td>O</td>
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<td></td>
<td>Observe Mr. Storey teach</td>
<td>O</td>
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<td></td>
<td>Join in game with class</td>
<td>T</td>
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<td></td>
<td>Return class to their room</td>
<td>O</td>
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<td></td>
<td>Meeting with Mr. Storey</td>
<td>O</td>
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<td></td>
<td>Set up equipment for class</td>
<td>O</td>
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<tr>
<td></td>
<td>Observe and assist with handball class</td>
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<td></td>
<td>Referee handball game</td>
<td>T</td>
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<tr>
<td>13 April</td>
<td>Teach handball to class</td>
<td>T</td>
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<td></td>
<td>Attend conference (post lesson)</td>
<td>O/S</td>
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<td>Observe &amp; assist handball class</td>
<td>T</td>
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<td>Check roll/attendance (M)</td>
<td>T</td>
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<td>Assist referee hockey game (M)</td>
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<td>Check roll (M)</td>
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<td></td>
<td>Assist referee hockey game (M)</td>
<td>T</td>
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<tr>
<td>14 April</td>
<td>Teach handball lesson</td>
<td>T</td>
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<td></td>
<td>Post lesson conference</td>
<td>O/S</td>
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<td></td>
<td>Assist with handball lesson</td>
<td>T</td>
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<td>15 April</td>
<td>Teach handball lesson</td>
<td>T</td>
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<td></td>
<td>Post lesson conference</td>
<td>O/S</td>
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<td></td>
<td>Reduce management time</td>
<td>T</td>
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<td></td>
<td>Teach handball lesson</td>
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<td>Post lesson conference</td>
<td>O/S</td>
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<td>Teach handball lesson</td>
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<tr>
<td>15 April</td>
<td>Assist in fitness testing (M)</td>
<td>X</td>
<td>T</td>
</tr>
<tr>
<td>18 April</td>
<td>Teach handball lesson</td>
<td>X</td>
<td>T</td>
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<tr>
<td></td>
<td>Post lesson conference</td>
<td>X</td>
<td>0/S</td>
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<tr>
<td>19 April</td>
<td>Use more names</td>
<td>X</td>
<td>T</td>
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<tr>
<td></td>
<td>Teach handball lesson</td>
<td>X</td>
<td>T</td>
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<tr>
<td></td>
<td>Post lesson conference</td>
<td>X</td>
<td>0/S</td>
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<tr>
<td>20 April</td>
<td>Teach handball lesson</td>
<td>X</td>
<td>T</td>
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<tr>
<td></td>
<td>Focus on names</td>
<td>X</td>
<td>T</td>
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<td></td>
<td>Post lesson conference</td>
<td>X</td>
<td>0/S</td>
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<td>Teach handball lesson</td>
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<tr>
<td></td>
<td>Check roll/attendance (M)</td>
<td>X</td>
<td>T</td>
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<td>Assist with fitness testing (M)</td>
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<td>21 April</td>
<td>Teach handball lesson</td>
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</tr>
<tr>
<td></td>
<td>Post lesson conference</td>
<td>X</td>
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</tr>
<tr>
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<tr>
<td></td>
<td>Timing track running (M)</td>
<td>X</td>
<td>T</td>
</tr>
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<td>Paint lines on track</td>
<td>X</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td>Observe &amp; assist kinder class</td>
<td>X</td>
<td>T</td>
</tr>
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<td>0/S</td>
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<td></td>
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<td>X</td>
<td>T</td>
</tr>
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<td>X</td>
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<td>T</td>
</tr>
<tr>
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<td>T</td>
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<td>T</td>
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<td></td>
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<td>T</td>
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<td></td>
<td>Supervise warm up (M)</td>
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</tr>
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<td>T</td>
</tr>
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<td>X</td>
<td>0/S</td>
</tr>
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</tr>
<tr>
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<td>X</td>
<td>0/S</td>
</tr>
<tr>
<td>29 April</td>
<td>Teach track &amp; field</td>
<td>X</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td>(focus on positive behavior interactions)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td>X</td>
<td>T</td>
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 3 repeat classes
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<th>Criterion</th>
<th>Task Type</th>
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<td>X</td>
<td>-</td>
<td>Tx3</td>
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<tr>
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<td>Teach soccer lesson (M)</td>
<td>X</td>
<td>X</td>
<td>-</td>
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<td>X</td>
<td>X</td>
<td>-</td>
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<td></td>
<td>Post lesson conference</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>0/S</td>
</tr>
<tr>
<td></td>
<td>Teach track &amp; field</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
</tr>
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<td>Teach teach soccer volleyball (M)</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>0/S</td>
</tr>
<tr>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>T</td>
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<td>X</td>
<td>-</td>
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<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
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<td>X</td>
<td>X</td>
<td>-</td>
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<td>Post lesson conference</td>
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<td>X</td>
<td>-</td>
<td>0/S</td>
</tr>
<tr>
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<td>X</td>
<td>X</td>
<td>-</td>
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<tr>
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<td>X</td>
<td>-</td>
<td>T</td>
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<tr>
<td></td>
<td>Teach track &amp; field</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td>Post lesson conference</td>
<td>X</td>
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<td>X</td>
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<td>Referee touch football (M)</td>
<td>X</td>
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<td>-</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td>Referee touch football (M)</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
</tr>
<tr>
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<td>Assist with softball games(M)</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
</tr>
<tr>
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<td>Teach kinder class</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>0/S</td>
</tr>
<tr>
<td></td>
<td>Teach track &amp; field</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
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<tr>
<td>25 May</td>
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<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>0/S</td>
</tr>
<tr>
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<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td>Team teach softball (M)</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>T</td>
</tr>
<tr>
<td>31 May</td>
<td>Set up bike course</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>0</td>
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<td>Teach bike safety lesson</td>
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<td>X</td>
<td>X</td>
<td>T</td>
</tr>
<tr>
<td>Date</td>
<td>Task</td>
<td>Specification</td>
<td>Task</td>
<td></td>
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<td>-------</td>
<td>-------------------------------------------</td>
<td>---------------</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 June</td>
<td>Team referee game mat ball (M)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 June</td>
<td>Set up for postponed field day - rain again so return equipment to store</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(M) = Morningstar School

Total 88 T
40 0
23 S
APPENDIX F

GRAPH DISPLAYING RECORD OF BEHAVIOR OR INTERACTIONS (By Mr. Storey)
APPENDIX G

GRAPH DISPLAYING RECORD OF USE
OF PUPIL NAMES (By Mr. Storey)
APPENDIX H

GRAPH DISPLAYING RECORD OF
LESSON MANAGEMENT TIME (By Mr. Storey)
APPENDIX I

DATA RECORDING SHEETS USED BY DR. AUSTIN
# Observation - Management Focus

<table>
<thead>
<tr>
<th>Key Behaviors</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Management (M)</td>
<td>related to class business, unrelated to instructional activity</td>
</tr>
<tr>
<td>Transition (T)</td>
<td>managerial and organizational activities related to instruction</td>
</tr>
<tr>
<td>Waiting (W)</td>
<td>completed a task, period of no activity and no movement between activities</td>
</tr>
<tr>
<td>Knowledge (K)</td>
<td>listening to instructions, watching a demonstration, questioning, discussing</td>
</tr>
<tr>
<td>Activity (A)</td>
<td>engaged in motor activity</td>
</tr>
<tr>
<td>Off task (O)</td>
<td></td>
</tr>
</tbody>
</table>

**Critical Incidents:**

- 
- 
- 
- 
- 

**Other Comments:**

- 
- 
- 
- 
- 

---

_Asked on_
### Summary Data

<table>
<thead>
<tr>
<th>Student Names</th>
<th>Total</th>
<th>Behavioral Interactions</th>
<th>Total</th>
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<tr>
<td>Used</td>
<td></td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Not Used</td>
<td></td>
<td>Negative</td>
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</table>
COPY OF ACTUAL RECORDING SHEET
USED BY MR. STOREY

APPENDIX J
<table>
<thead>
<tr>
<th>Time (min)</th>
<th>Management</th>
<th>Activity</th>
<th>Instruction</th>
<th>Total Time</th>
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<tr>
<td>10.00</td>
<td>1.20</td>
<td>1.15</td>
<td></td>
<td>3.55</td>
</tr>
<tr>
<td>10.00</td>
<td>4.80</td>
<td>4.45</td>
<td></td>
<td>9.25</td>
</tr>
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<td>10.00</td>
<td>1.10</td>
<td>1.15</td>
<td></td>
<td>2.25</td>
</tr>
<tr>
<td>10.00</td>
<td>1.10</td>
<td>1.15</td>
<td></td>
<td>2.25</td>
</tr>
</tbody>
</table>

**TIME ANALYSIS**

- **Total Management Time**: 1 hour 34 minutes
- **Total Activity Time**: 1 hour 12 minutes
- **Total Instruction Time**: 2 hours 9 minutes
- **Total Time**: 3 hours 9 minutes

**AVERAGE MANAGEMENT TIME/EPISODE**

- **Positive Behavior Interactions**: 1
- **Negative Behavior Interactions**: 1

**AVERAGE ACTIVITY TIME/EPISODE**

- **Positive Skill Feedback Statements**: 2
- **Negative Skill Feedback Statements**: 2

**AVERAGE INSTRUCTION TIME/EPISODE**

- **Positive Corrective Statements**: 1
- **Negative Corrective Statements**: 1

**No. of times teacher uses students first names**

- 3

**Notes**

- Class ended with one or more with grade.
APPENDIX K

POST LESSON CONFERENCE BETWEEN UNIVERSITY
SUPERVISOR AND INTERN (27 April)
A  "How did you feel about this the second class?"
M  "Well I think the beginning went better when I told them by expectations..."
A  "Well I was very impressed with the beginning - it was a super start - it really was."

"My general impression was that I was really impressed - and I don't say that often - with the start of the class - the first 10 minutes were great."

"But in terms of management and organization of skills you really need to get organized as far as that's concerned."
A  "The other most pleasing thing for me was during the warm up - you got my note the other day about kids observing the warm up (M "yes") - I don't know if that made a difference (M "It only takes one"). OK well that's encouraging to me that you can control your behavior and that you can respond to feedback."
A  "One of your management goals is quote 'after the first four weeks of class the students will be changed and ready for class in four minutes.' How long do you think it took? It was six"
M  "We told them our expectations today."
A  "Well I think four minutes is realistic."

"How long do you think it took to complete the warm up laps? (M "The last kid?") Yeah."
A  "It took about four and one half minutes which is not too bad. But you might want to think about just one lap."
M  "Well we discussed that and they (the cooperating teachers) want us to start upping the laps and eventually build up to five laps by the end of school."

A  "Well that's all the more reason to hustle in warm up - and perhaps forget warm up sometimes - can you do that - do you have to do the warm up inside?"

M  "Well that's just their policy - they always have a little bit of a warm up."

A  "Now onto Instruction! It was about 15 minutes into class that we began Instruction. Procedures and policies were good."

"Not all kids could see the demo. You just want to put three cones in a triangle so you're there (shown on drawing) and you're there and the demo is there."

"The biggest problem I think - and it's not difficult for you to achieve."

"The lesson really fell apart when the kids were spread from one end of the field to the other for simple passing skills - you spend a lot of time walking up and down giving feedback - which you did nicely - but what you need is the kids in a confined space."

"You need to limit the working space."

"So let's get them closer together and just work on their skills."

"You need to make sure that they know the difference between the various kicks and that they practice them. The instep kick was probably inappropriate today."
"So think about close together for the start."

"Set them a target for how many etc. in practice."

A  "What I want to see in the lesson plans is how you are going to structure the practices.

A talks about the importance of cones for organization of class.

A  "OK - well there are no major discipline problems but by placing a few demands in terms of their skill they will stay on-task better.

[Mark asks A what to do with kids (one or two) who continue to fool around. A discipline question. A turns question back on M - M responds and A adds to it.]

A  "Have you got your lesson plan there?"

"Don't feel bad about referring to notes during class."

M  "Here is the lesson and I have the unit plan also."

A takes lesson plan and forgets unit plan. [Looks at lesson plan.]

A  "Think about training - in minutes - I have some lesson plan forms."

"You can afford to be - I don't mind you being this detailed and your objectives are fine - but -"

M  "I'll be briefer next time."

A  "Well that's almost a unit plan in itself (he says referring to the lesson plan). Better that way than too skimpy."

"Think about time - and get into the habit of diagramming skills for all kids in class not just one or two but the pattern for all the kids in class (A draws one for M)."
"OK so make sure the organizational diagram appears in your lesson plan - it's very important."

"OK keep up the good work."
APPENDIX L

AUDIT REPORT:
COMMISSIONED BY RICHARD TINNING
FOR HIS INQUIRY INTO
A TASK THEORY OF STUDENT TEACHING:
DEVELOPMENT AND PROVISIONAL TESTING

Submitted by Thomas B. Steen
October 4, 1983

Signature
Thomas B. Steen
A. INTRODUCTION

Little is known about how to do a research audit. Although the idea of an audit as an Inquiry consistency test is a powerful one (Guba and Lincoln, 1981), it is also a new one. There are no examples of other research audits in the literature, and other than one important professional paper (Lincoln and Guba, 1982), guides for audit procedure do not exist. Therefore, this audit is, by necessity, exploratory.

Early in the summer of 1983, Richard Tinning asked me to conduct a audit of his dissertation research on tasks in student teaching. In spite of knowing, at that time, only a little about Tinning's project and knowing even less about a research audit, I agreed, hoping to learn more about both, and in the bargain, gaining a better knowledge of qualitative research. We arranged to meet again in late summer when Tinning expected to have completed the draft of his dissertation.

On September 9, 1983, we met to get the project underway. On that occasion, Tinning turned over to me the major portion of his research notes, the major part of his dissertation draft, and a copy of a professional paper explaining the rationale and procedure for a research audit. Using the paper "Establishing Dependability and Confirmability in Naturalistic Inquiry Through an Audit" by Lincoln and Guba (1982) as a guide, I attempted to do an audit of Tinning's work.
This paper contains an explanation of my audit work plus the judgments I made as a result of that work. This is the auditor's report.

The report is divided into the following sections:

A. Introduction
B. The Audit Procedure
C. The Auditor
D. Organization of the Report
E. Audit Work and Auditor Judgements
   1. Audit Trail
   2. Completeness of Audit Trail
   3. Methodology-Comparison of Procedures to Problems
   4. Methodology-Comparison of Raw Data to Final Product
   5. Shifts
   6. Logic of Inferences
F. Conclusion
G. Recommendations

References and Resources

B. THE AUDIT PROCEDURE

Lincoln and Guba (1982) listed eight steps in the audit procedure. Although these steps were carefully explained, in several of the steps I had to make some adaptations, additions, and deletions in the audit procedure. These changes were made in the interests of need for more detail, the limited available time, and the nature of the inquiry itself. Tinning's use of "mixed paradigms" (see Chapter V) required some audit adaptations; Lincoln and Guba's procedure seems to be most
directly addressed to more "classic" methods of naturalistic inquiry.

The crux of the audit was to answer the question: "Was the inquiry 'carried out in a reasonable manner?" (Lincoln & Guba, 1982, p. 4). That question translated into two tasks for the auditor:

1. to review the Inquiry processes to be certain they fall within the norms of "good professional practice," and,

2. to review the Inquiry products to be certain that they can be substantiated from the data collected. (p. 4)

The first task concerns the dependability of the inquiry and the second task concerns its confirmability. This audit, then, attempts to establish the dependability and confirmability of Tinning's work.

C. THE AUDITOR

Lincoln and Guba's conception of a research audit stems, in part, from their understanding of a fiscal audit. As is the case in a fiscal audit, the research auditor is expected to be a "professional peer of the inquirer." (p. 14) But unlike the fiscal auditor, who holds certification from a profession governing body which attests to his training and/or experience, little is known about the qualifications of the research auditor without at least a brief synopsis of his training and experience in the areas of the inquiry.
The auditor is a Graduate Teaching Associate at The Ohio State University in the physical education teacher education program. He has studied educational research theory and methods in group comparative research, single case experimental research, and in qualitative research. He is currently continuing his study of qualitative research and plans to conduct a naturalistic inquiry for his own dissertation.

The auditor will receive one hour of academic credit upon the completion of the audit report.

D. ORGANIZATION OF THE REPORT

This report follows the procedure outlined by Lincoln and Guba (1982). Each step is listed as it appeared in the Lincoln and Guba paper. The work performed by the auditor for each step in the process is briefly described and explained. Each section is then concluded by the auditor's judgment which he believes to be warranted by the work previously described.

E. AUDIT WORK AND AUDITOR JUDGMENTS

1. Audit Trail

The audit trail left by a naturalistic inquirer consists of documentation or archival materials which result from or are important to the study. It is the evidence of the researcher's work, evidence which can be examined by an
"outside" party in order to evaluate the reasonableness of the methods and products of the inquiry.

At one meeting on September 9, 1983, Tinning turned over to me the following documentation:

- the typed draft of Chapters I, III, IV, V, VI and VII of his dissertation. At the time, Chapters II (Literature Review) and VIII (Conclusions) were not yet completed.

- eight audio tapes of conferences, interviews, and meetings which Tinning recorded during the course of his data collection. The tapes were labeled by data and activity (e.g., interview), and sometimes by the persons involved.

- handwritten transcripts of the audiotapes. The pages (112) were labeled as to the date, meeting, site, and sometimes persons involved; the lines on each pager were consecutively numbered from 1-26 along the left hand margin.

- handwritten field notes in a spiral bound notebook and taken from observations starting 7 March, 1983 and ending 8 June, 1983. The field notes were also labeled and numbered by line in the same style as the transcripts. An extra-wide left-hand margin was used for observer comments and occasional time notations.
assorted other documentation such as: a page of interview questions for a conference, copies of two letters to school principals requesting access.

- activity log with a listing of inquirer activities, organized by date, in a 6" X 9 1/2" spiral bound notebook. There were 48 entries starting 7 March and ending 8 June.

- reflexive journal containing the inquirer's notes about his perceptions, insights, fears, mistakes, confusions, problems, etc. The back section of the same notbook used for the activity log was used for the reflexive journal. There were 38 entries penciled in the journal, labeled by date and sometimes by site at various times.

Later, during the audit, I requested and obtained additional documentation from Tinning:

- copies of Appendices F, G, H, and I.
- a sample file folder and field note excerpts used to organize data analysis.
- a draft of Chapter VII - Conclusions and Recommendations.
- about half of the final draft of Chapter VII - Analysis and Discussion, parts of which had been revised from the draft I had obtained earlier.
I did not obtain:
- Chapter II - Literature Review of Tinning's dissertation.
- the data analysis system (file folders, cut out sections of field notes and transcripts).
- the research proposal or problem statement.

I had complete access to the documentation I acquired. They were in my possession until the conclusion of the audit on 3 October, 1983.

2. Completeness of the Audit Trail

I carried out a thorough inspection of the data and inquiry products. Tinning was very cooperative in providing additional materials at my request.

Although I would have liked to have learned more about the unitizing and categorizing systems used in data analysis (the folders and note excerpts were not locatable until the last day of the audit), it is my judgment that Tinning's audit trail was sufficiently complete to carry out an audit.

It is my opinion that the unavailability of the data analysis systems did not detract from the audit in a major way. In Tinning's work, the unitizing and categorizing of the data was a relatively simple process (compared to more traditional or "classic" forms of qualitative research) in that he used a set of hypotheses specified a priori which functioned as predetermined categories. Had the data
categories been derived inductively, it would have been necessary for the auditor to view the evidence of categorizing and unitizing processes. In this case, such evidence would have been useful to the auditor's purpose but not necessary.

3. Methodology - Comparison of Procedures to Problems

Lincoln and Guba state that

"the purpose of this step is to discover whether the inquiry problem was one which suitably might be addressed by naturalistic inquiry, and whether a naturalistic inquiry was in fact carried out." (1982, p. 17)

However, in light of Tinning's use of mixed paradigms (see Chapter V on "Mixed Paradigms? A Justification"), it seems more useful to attempt to discover whether the "right" procedure was employed for the problems addressed. In order to make that attempt at discovery, I needed to ask three questions:

1. What is the research problem(s)?
2. What is the procedure used?
3. Is the procedure right for the problem?

Tinning's inquiry derived from two related questions. First, can a task and accountability theory of student teaching be developed and provisionally tested? And second, "What is out there?" in student teaching with respect to task systems and accountability mechanisms?
Tinning used the naturalistic techniques of participant observation, interviews, and document analysis to "gather descriptive type of qualitative data" (Chapter II) and he used a form of modified analytic induction to analyze the data and test the theory he developed.

It is my judgment that the fit of procedure to problem in Tinning's work is eminently reasonable. In order "to record the details of contingency management of tasks," it was necessary to collect data throughout the life of as many tasks as possible. This not only required regular, continuous observation of the setting in which the tasks occurred, but also required that the observations be complete and detailed. The use of modified analytic induction to test theory is clearly called for (see Robinson, 1951 in Bogdan and Biklen), and is particularly appropriate in this case, given the nature of the data (qualitative) and the scope of the theory (23 original hypotheses).

It is at this point, of fitting the procedure to the problem, that the issue of mixed paradigms is especially evident. Theory testing seems best done in the "scientific" tradition but the nature of tasks and accountability is such that they are best described with naturalistic means. Yet given the constraints of Tinning's study - 11 weeks time and one researcher available - as well as his explanation of the problem and the research procedure, his selection of
methodology is, in my opinion, entirely reasonable. It may, indeed, be one of the most important strengths of this work.

4. Methodology - Comparison of Raw Data to Final Product

According to Lincoln and Guba (1982), there are two auditor tasks in this step: check the data analysis systems and compare the raw data to the final product or report. As noted earlier, there was little documentation in the audit trail for the data analysis systems. I did obtain a sample of one of the file folders and data "snippets" used for data analysis and, upon my request, Tinning explained the process he used for unitizing. Tinning explained his method for categorizing the data in folders for each of the hypotheses tested (see Chapter V for his explanation of the process).

Considering Tinning's explanation of the data analysis process and assuming the process was consistently and uniformly applied, it is my judgment that the process used - field note/transcript search for hypothesis-supporting excerpts and a filing system by hypotheses - was appropriate for the data collected.

As a way to compare the raw data to the final product, I made seven "example checks" in which I randomly selected data samples used that were reported by Tinning in Chapter VII - Analysis and Discussion and compared the sample reported to the original forms of data. In this part of the
audit work, I asked three questions about each reported example and conducted an examination of the raw data to answer each question:

1. Was the example warranted from the data? (Was it documented?, was the example or the example context referenced in more than one source of data?)

2. Was the example accurately reproduced?

3. Was it a reasonable example of the hypothesis or phenomenon in question?

The first two questions addressed the dependability of the selected examples and the last question was concerned with their confirmability.

Although I would have preferred to select and examine a larger number of examples, there was only time to work with a sample of nine examples. I was not able to locate two of the examples selected because they were not dated in the research report and, in the time available, was not able to track them from the context in which they appeared. I was able to locate seven of the examples that I selected; I examined each of them according to the three questions listed above.

I found that each of the seven examples I selected was warranted in the raw data and accurately reproduced in the research report. Based on my understanding of the problem and my examination of the raw data, I judged that each
example reported was quite reasonable in terms of the hypothesis or phenomenon in question.

5. Shifts

Lincoln and Guba (1982) recommend that the auditor "note shifts in methods deployment of personnel, and judgments about context and problem" and make a judgment about "whether or not the shifts were supportable or sensible in view of the data collected" (p. 18).

Due to the nature of Tinning's study, in which he started with a predetermined, deductively derived theory, his work was designed to be less emergent than many other naturalistic inquiries. As a result, there was only one significant shift, which was the modification of the original task theory. There were no shifts in the methodology employed.

The task theory modification, however, was clearly significant to the study. The modification is explained in detail in Chapter IV on page 110. The modification is documented in the reflexive journal.

23 April, Saturday - Came to the conclusion that the theory I had developed was too complex to test and decided to work from the contingency model in Alexander (1982) [after Tousignant (1982)]. While accounting for the same phenomenon (sic), this model will be used to develop a more parsimonious theory which can be better tested by data.
From my review of the original task theory and the modification, it is my judgment that Tinning's desired payoff in parsimony and testability was realized in the theory modification.

6. Logic of Inferences

Lincoln and Guba (1982) describe this step in which the auditor notes whether inferences flow logically from the data, as "especially sensitive" (p. 19). It is sensitive in that:

"While it is clear that an auditor may be able to follow the trail processes...and to track data...it is not clear that he will be able to bring to bear the insight, judgment, and wisdom that the original inquirer brought in reaching his conclusions." (p. 19)

It is fortunate that in the case of a doctoral dissertation, the auditor is not alone in this task. It seems to me that this is also one of the tasks of the reading committee. Although the auditor probably has greater access to the raw data (and is therefore in a better position to evaluate the dependability of the inquiry), the members of the reading committee bring a degree of expertise in judging the logic of the researcher's inferences that is unavailable to the auditor.

Further, it is unfortunate that I was only able to work with Tinning's Chapter VII - Conclusions for only a few days. And the draft I had was still in revision. So the work for this step was doubly difficult.
My initial thought was that I would be better to leave this entire step up to the reading committee. But, on second thought, that seemed to be ducking an auditor responsibility and it would negate the advantage of the auditor's closeness to the raw data. With that in mind, it is my tentative judgment, from examining the data and (briefly) the inquirer's conclusions, that Tinning's conclusions appear to be logical and sensible from the data and processes outlined in his report.

F. CONCLUSION

On the basis of my examination of the audit trail and the research report in my possession, it is my judgment that in the investigation of tasks and accountability in student teaching by Richard Tinning:

1. both processes and products appear to conform to reasonable canons of good naturalistic practice, and

2. it is structurally coherent, and

3. the conclusions appear to be warranted from the raw data, and

4. through use of examples of data collected in the field, the final report provides something of a vicarious experience to the reader via thick description and strongly focused narrative.
G. RECOMMENDATIONS

I often wished, during the course of the audit, that I would have been able to see other audit reports to see "how it is done." Although I did discuss, at some length, the nature of a fiscal audit with a businessman-colleague, the lack of audit examples was an important drawback for me. Perhaps this report can serve other research auditors as an example (hopefully more positive than negative) and help to eliminate this drawback in their work.

Since research audits appear to be quite scarce, it seemed that it might be well to briefly list a few recommendations for future inquirers and auditors.

1. All audit trail documentation should be clearly labeled so that an "outsider" can easily locate the data contained therein.

2. When audiotapes are used, the recording tabs (on the bottom edge of the cassette) should be removed to prevent accidental erasure and to ensure their dependability.

3. When tapes are used, a tape inventory would be useful in tracking transcripts.

4. To ensure readability, field notes and journals should use one side of the page only, particularly when made with pencil.

5. An example of a research or a fiscal audit might be a helpful aid, particularly for auditors.
6. Inquirers should document the issues and auditors' decisions that they make about the conduct of their inquiry, even though they may not be directly applicable to the inquiry report. (See Tinning's reflexive journal as a good example.)

7. The inquirer's rules or guidelines for categorizing and unitizing the raw data for analysis should be made explicit to the auditor, preferably in writing.

POSTSCRIPT

At the most basic level, an audit is an attempt to establish the inquirer's warrant of a claim to knowledge of the phenomena under study. And the audit itself is a warrant of a claim to know the dependability and confirmability of the inquiry under audit. This report is offered as such a warrant.

Any credit for this report should go to the guides - Lincoln and Guba, who led well, and to the trailblazer - Richard Tinning, who left a good trail. The responsibility for errors, by commission or omission, clearly belongs to the auditor.

REFERENCES AND RESOURCES


